



US Army Corps
of Engineers
Alaska District

Public Notice of Application for Permit

Regulatory Branch (1145b)
Post Office Box 6898
Elmendorf AFB, Alaska 99506-6898

PUBLIC NOTICE DATE: 23 February 2004

EXPIRATION DATE: 24 March 2004

REFERENCE NUMBER: POA-2003-66-2

WATERWAY NUMBER: Tongass Narrows/George Inlet

Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States as described below and shown on the attached plan.

APPLICANT: Alaska Department of Transportation & Public Facilities (ADOT),
6860 Glacier Highway, Juneau, Alaska 99801, POC Kathryn Erickson, 907-465-4504

LOCATION: Along South Tongass Highway from Deermont Street to Herring Cove within sections 29, 30, 32, 33, 36, T. 75 S., R. 91 E., and sections 1, 2, 4, 10, 11, T. 76 S., R. 92 E., Copper River Meridian; ~longitude 131° 37' 21", latitude 55° 19' 59" (start of project); ~longitude 131° 32' 11", latitude 55° 17' 39" (middle of project-Mountain Point); ~longitude 131° 31' 19", latitude 55° 19' 39" (end of project-Herring Bay).

WORK: To upgrade existing South Tongass Highway by impacting approximately 7.31 acres of waters of the U.S., with approximately 4.59 acres being permanently filled (see Sheet 1 of 43). Fill, through cut/fill activities, would be placed in ~3.92 acres of forested wetlands, ~0.34 acre of riverine waters, ~1.57 acres of palustrine emergent wetlands, and ~1.48 acres of estuarine waters, of which ~0.68 acres are below the mean high water (MHW). Three catalogued streams ([101-47-10300]), ([101-47-10005]), ([101-47-10010]) cross under the roadway and these culvert would be upgraded to improve fish passage. A total of 27 culverts, including the three in anadromous streams, within jurisdictional waters would be replaced. Additional culverts would provide storm drainage.

PURPOSE: To rebuild the South Tongass Highway to meet current Federal standards, replace the highway pavement and provide a pedestrian/bicycle pathway.

ADDITIONAL INFORMATION: The wetland delineation provided by the application has not been verified by the Corps of Engineers. Minor variations in the impact area may result based on the approved wetland delineation. The applicant did not identify the locations of the material sites, overburden disposal sites, staging areas or access areas. These areas will be identified and impacts evaluated prior to completion of application evaluation. A survey for active Eagle nests was not included with the application package. The applicant will be required to provide this information for evaluation prior to completion of the application evaluation. Location of noxious weeds populations and a plan to manage them during the construction phase of this project will be required prior to permitting.

Some figures submitted with the application were omitted from the public notice because they did not show disturbances within forested wetlands, emergent wetlands, riverine, or estuarine substrates. The complete set of figures is included with the supplemental information. For the supplemental information see the Regulatory Web Page, <http://www.poa.usace.army.mil/reg>, under this public notice.

MITIGATION: As a result of pre-application coordination, the applicant has modified the design to minimize fill in estuarine wetlands by designing the 1.5:1 (h:v) sideslopes in areas with intertidal impacts. In some areas the road would be realigned away from the waterside to avoid impacts. In addition, fish passage would be improved at three anadromous fish streams.

The applicant proposes the following compensatory mitigation for unavoidable impacts: Payment in-lieu of mitigation of \$83,760.41 is proposed to mitigate for impacts to waters from this project. The breakdown is as follows: 1.2 acres of intertidal rocky shore and ~0.34 acre of riverine waters at \$20,000/acre; 0.31 acre of high value intertidal aquatic bed at \$50,000/acre; and 3.92 acres and 1.57 acres of forested and palustrine emergent wetlands, respectively, at \$6,939/acre. ADOT proposes to put these funds towards the construction of the Schoenbar culvert replacement project.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended by 16 U.S.C. 1456(c)(3), requires the applicant to certify that the described activity affecting land or water uses in the Coastal Zone complies with the Alaska Coastal Management Program. A permit will not be issued until the Office of Project Management and Permitting, Department of Natural Resources has concurred with the applicant's certification.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. Many properties were listed within the vicinity of the project. Four of these properties in the vicinity of the worksite are KET-00021, Saxman Petroglyph; KET-00425, McDonald Lake Fish Hatchery (YES Bay Hatchery); KET-00435, Ketchikan Dump; and KET-00077, Herring Bay Petroglyph. There is insufficient information at this time to determine whether the properties are within the project area. Consultation of the AHRS constitutes the extent of cultural resource investigations by the District Engineer at this time. This application is being coordinated with SHPO. Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

TRIBAL CONSULTATION: The Alaska District fully supports tribal self-governance and government-to-government relations between the Federal government and Federally recognized Tribes. This notice invites participation by agencies, Tribes, and members of the public in the Federal decision-making process. In addition, Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Alaska District on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This Public Notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal right or resource. The affected Tribe, upon written request to the

District Engineer, may initiate consultation during the public comment period.

ENDANGERED SPECIES: The project area is within the known or historic range of the Humpback whale (*Megaptera novaeangliae*) and the Steller sea lion (*Eumetopias jubatus*), listed as endangered and threatened under the Endangered Species Act (ESA), respectively. Preliminarily, it has been determined that the described activity will not affect threatened or endangered species, or their critical habitat designated as endangered or threatened, under the ESA of 1973 (87 Stat. 844). This application is being coordinated with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Any comments they may have concerning endangered or threatened wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to the Magnuson Stevens Fishery Conservation and Management Act of 1996 (MSFCMA), 16 U.S.C. et seq and associated federal regulations found at 50 CFR 600 Subpart K. The Alaska District includes areas of EFH as Fishery Management Plans. We have reviewed the January 20, 1999, North Pacific Fishery Management Council's Environmental Assessment to locate EFH area as identified by the NMFS. EFH for 10 species with various life stages was identified near the project area. In addition, the project would cross three anadromous fish streams. We have preliminarily determined that the described activity within the proposed area may adversely affect EFH, including anadromous fish and federally managed fishery resources.

The proposed work may affect approximately 1.5 acres of EFH for juvenile/adult salmon, and groundfish. This Public Notice initiates consultation requirements with the NMFS under the MSFCMA. NMFS has concurred with ADOT's finds that this project may adversely affect EFH. Based on the applicant proposed conservation and mitigation measures, NMFS did not propose additional conservation measures. We have insufficient information at this time to assess the cumulative effects of the proposed work on EFH, but cumulative effects will be considered in our final assessment of the described work. Any conservation recommendations regarding EFH for federally managed fish will also be considered in our final assessment of the described work. This proposed project might also adversely affect associated species such as major prey or predator species, which are not covered by Fishery Management Plans.

SPECIAL AREA DESIGNATION: None.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local

agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the described work, with the reference number, should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Dr. Jan Stuart at (907) 753-2720, toll free from within Alaska at (800) 478-2712, by mail at Department of the Army, U.S. Army Engineer District, Alaska, PO Box 6898, Elmendorf AFB, Alaska 99506-6898
ATTN: CEPOA-CO-R-E or by email at jan.f.stuart@poa02.usace.army.mil if further information is desired concerning this notice.

AUTHORITY: This permit will be issued or denied under the following authorities:

(X) Perform work in or affecting navigable waters of the United States - Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States - Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

A plan, Notice of Application for Certification of Consistency with the Alaska Coastal Management Program, and Notice of Application for State Water Quality Certification are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

Attachments

FRANK H. MURKOWSKI, GOVERNOR

STATE OF ALASKA

OFFICE OF THE GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF WATER
401 Certification Program

NOTICE OF APPLICATION FOR STATE WATER QUALITY CERTIFICATION

Any applicant for a federal license or permit to conduct an activity that might result in a discharge into navigable waters, in accordance with Section 401 of the Clean Water Act of 1977 (PL95-217), also must apply for and obtain certification from the Alaska Department of Environmental Conservation that the discharge will comply with the Clean Water Act, the Alaska Water Quality Standards, and other applicable State laws. By agreement between the U.S. Army Corps of Engineers and the Department of Environmental Conservation, application for a Department of the Army permit to discharge dredged or fill material into navigable waters under Section 404 of the Clean Water Act also may serve as application for State Water Quality Certification.

Notice is hereby given that the application for a Department of the Army Permit described in the Corps of Engineers' Public Notice No. POA-2003-66-2, Tongass Narrows/George Inlet, serves as application for State Water Quality Certification from the Department of Environmental Conservation.

After reviewing the application, the Department may certify that there is reasonable assurance that the activity, and any discharge that might result, will comply with the Clean Water Act, the Alaska Water Quality Standards, and other applicable State laws. The Department also may deny or waive certification.

Any person desiring to comment on the project with respect to Water Quality Certification may submit written comments within 30 days of the date of the Corps of Engineer's Public Notice to:

Department of Environmental Conservation
WQM/401 Certification
410 Willoughby Avenue
Juneau, Alaska 99801-1795
Telephone: (907) 465-5321
FAX: (907) 465-5274

FRANK H. MURKOWSKI, GOVERNOR

STATE OF ALASKA

OFFICE OF THE GOVERNOR

**DEPARTMENT OF NATURAL RESOURCES
OFFICE OF PROJECT MANAGEMENT AND PERMITTING**

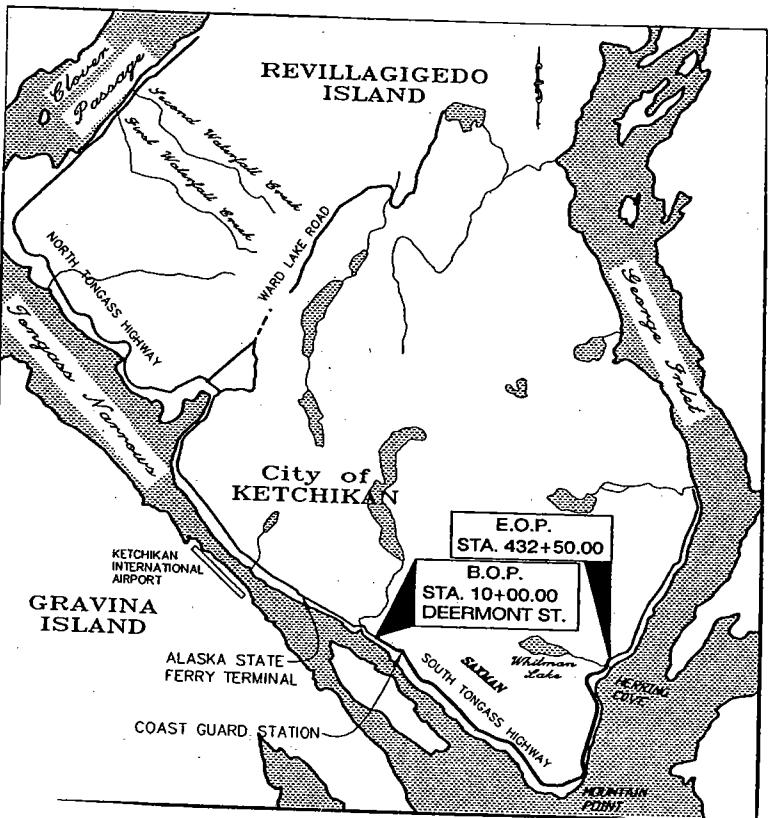
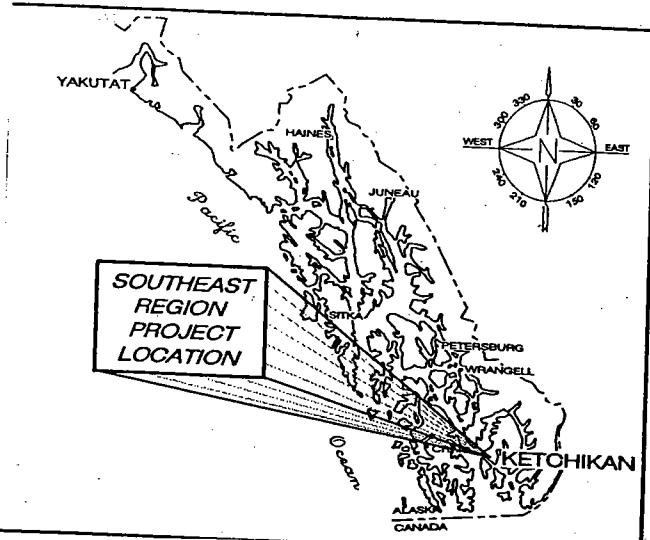
OFFICE OF PROJECT MANAGEMENT AND PERMITTING
302 GOLD STREET, SUITE 202
JUNEAU, ALASKA 99801-1127
PHONE: (907) 465-3562/FAX: (907) 465-3075

**NOTICE OF APPLICATION
FOR
CERTIFICATION OF CONSISTENCY WITH THE
ALASKA COASTAL MANAGEMENT PROGRAM**

Notice is hereby given that a request is being filed with the Office of Project Management and Permitting for a consistency determination, as provided in Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended [16 U.S.C. 1456(c)(3)], that the project described in the Corps of Engineers Public Notice No. POA-2003-66-2, Tongass Narrows/George Inlet, will comply with the Alaska Coastal Management Program and that the project will be conducted in a manner consistent with that program.

This project is being reviewed for consistency with the Alaska Coastal Management Program. Written comments about the consistency of the project with the applicable ACMP statewide standards and district policies must be submitted to the Office of Project Management and Permitting. For information about this consistency review, contact OPMP at (907) 269-7470 or (907) 465-3562, or visit the ACMP web site at <http://www.gov.state.ak.us/gdc/Projects/projects.html>.

Attachment 2



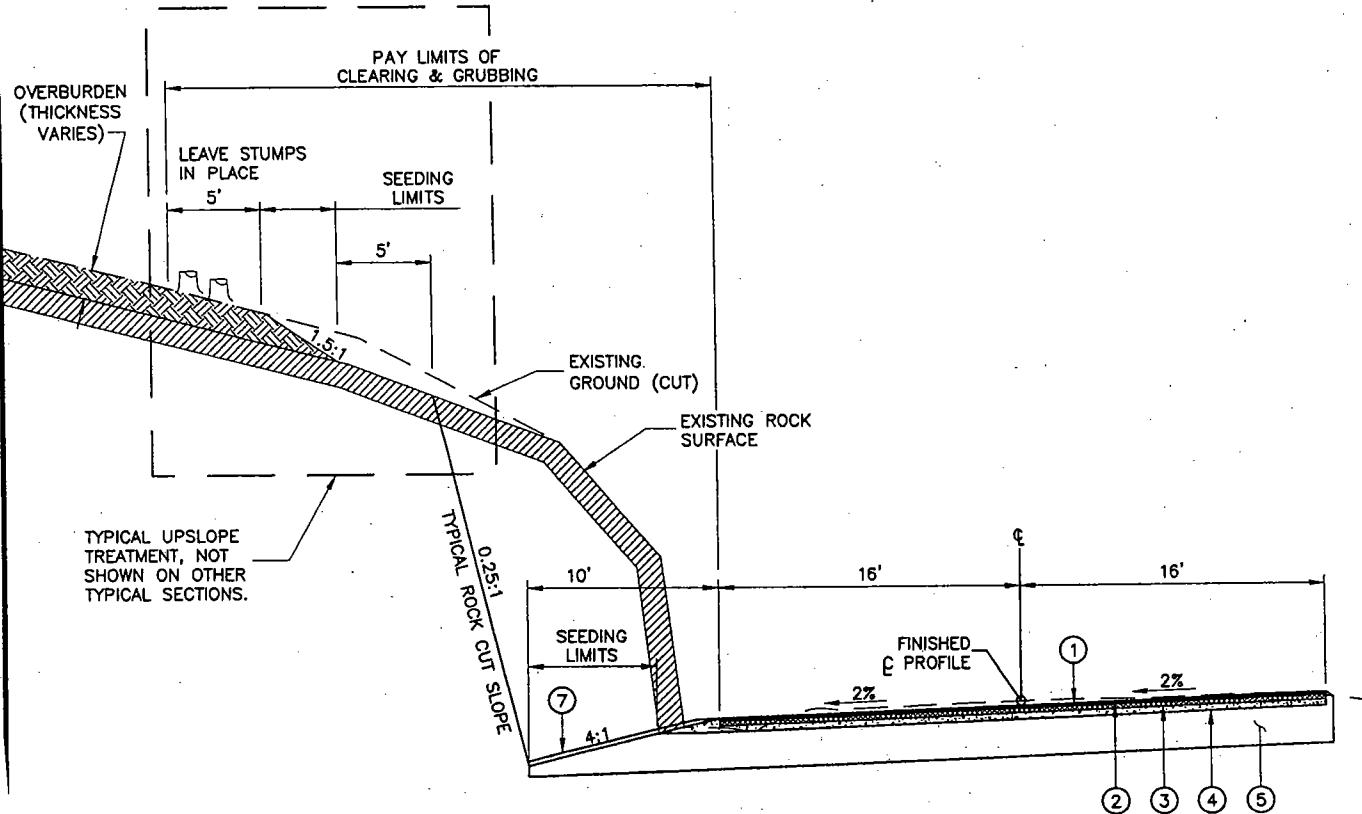
WETLAND TYPE	AREA OF IMPACT (ACRES)	AREA OF FILL (ACRES)	ASPHALT CONCRETE (CY)	ASPHALT TREATED BASE (CY)	SHOT ROCK FILL	RIPRAP CLASS III (CY)	RIPRAP CLASS I (CY)	TOTAL VOLUME (CY)
Drainage	1.566	1.249	138	207	2691	0	120	3156
E2ABIN	0.309	0.290	3	4	30	700	10	747
E2RSN	1.174	1.174	6	9	11520	3200	50	14785
PFO4BG	3.919	1.625	371	557	8291	0	80	9299
R1SB3	0.031	0.004	19	29	14	0	8	70
R2UB1	0.304	0.245	39	59	1490	0	60	1588
Totals	7.303	4.587	576	864	24037	3900	328	29645

	Fill Volume	Fill Area
Below HTL	15,532 cubic yards	1.483 acres
Below MHW	2,557 cubic yards	0.677 acres

SOUTH TONGASS HIGHWAY

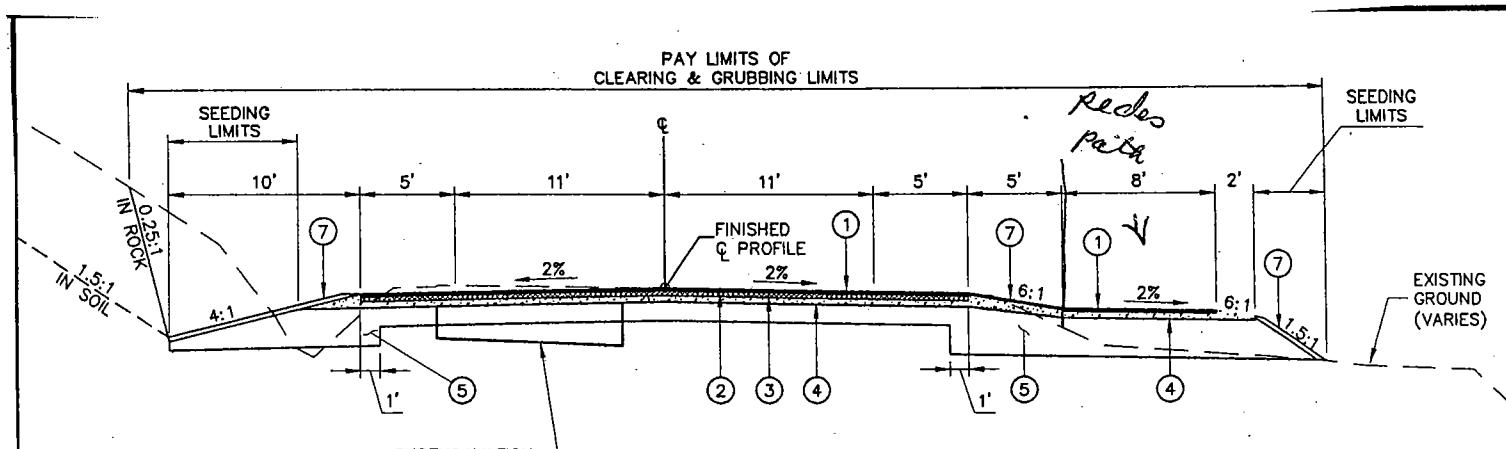
South Tongass Highway

POA-2003-66-2
Tongass Narrows
2-17-04



TYPICAL SECTION
DEERMOUNT STREET TO SAXMAN

NOTE:
EXISTING CURB & GUTTER,
GUARDRAIL, OR EXISTING
PATH TO REMAIN.



TYPICAL SECTION
SAXMAN TO MOUNTAIN POINT

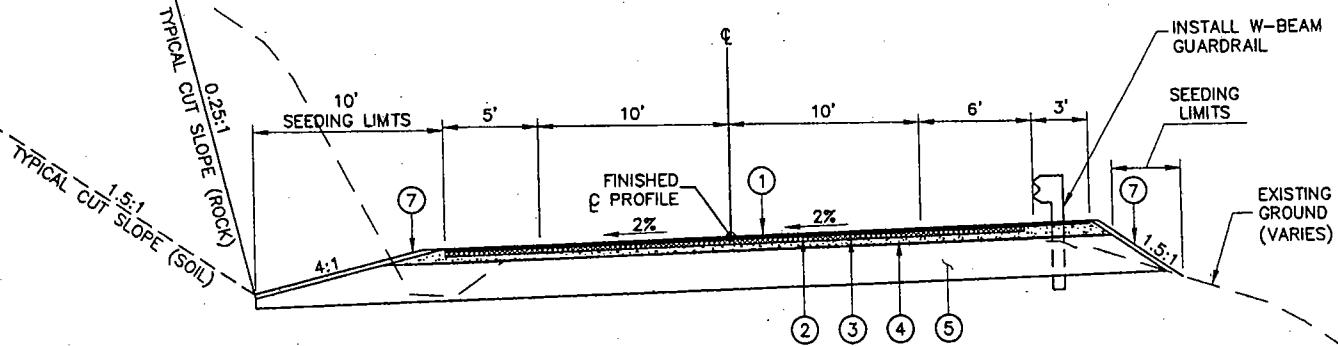
LEGEND

- ① 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
- ② STE-1 TACK COAT
- ③ 3" ASPHALT TREATED BASE
- ④ 4" SUBBASE, GRADING C
- ⑤ 24" SELECT MATERIAL, TYPE A
- ⑥ SELECT MATERIAL, TYPE B
- ⑦ 3" TOPSOIL
- ⑧ RIPRAP, CLASS III

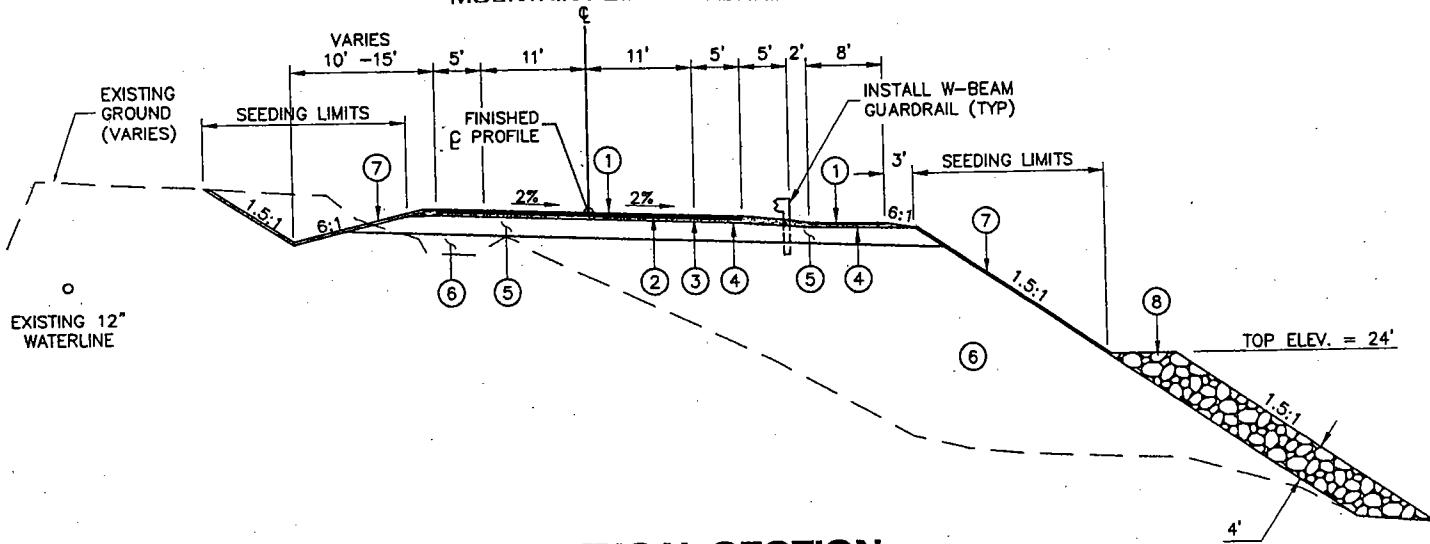
SOUTH TONGASS HIGHWAY

South Tongass Highway

POA-2003-66-2
Tongass Narrows
2-17-04

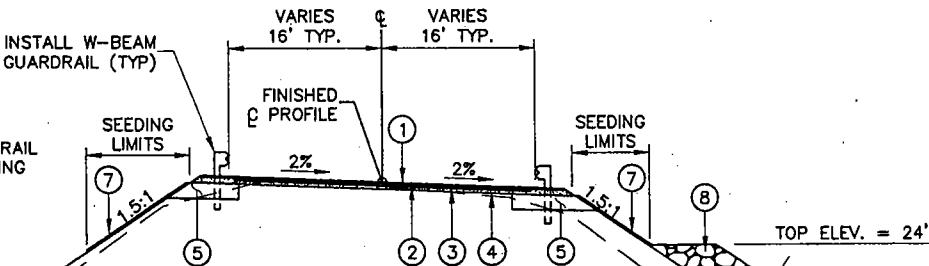


TYPICAL SECTION
MOUNTAIN POINT TO HERRING COVE



TYPICAL SECTION
MOUNTAIN POINT

NOTE:
EXISTING BRIDGE AT HERRING COVE
TO REMAIN. PAVEMENT AND GUARDRAIL
WILL BE TAPERED TO MATCH EXISTING
WIDTH.



TYPICAL SECTION
HERRING COVE

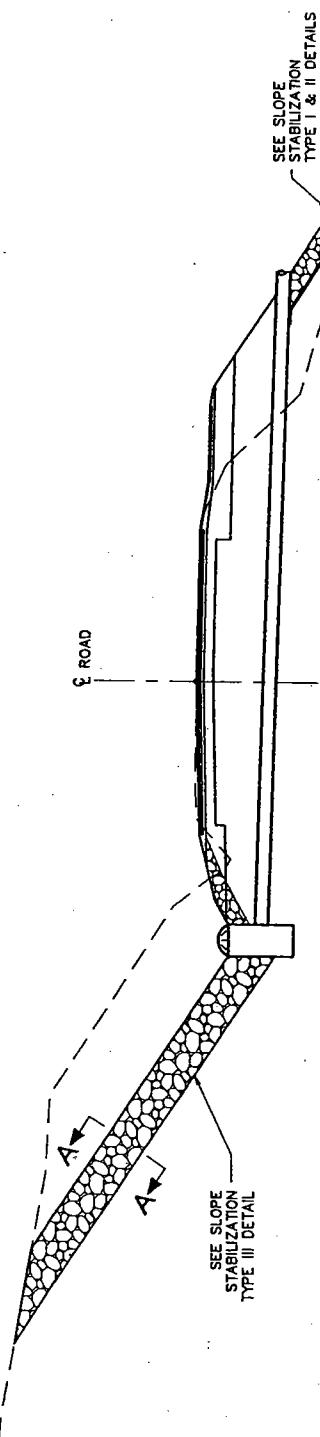
LEGEND

- | | |
|-------------------------------------------------------|---------------------------------|
| (1) 2" ASPHALT CONCRETE PAVEMENT,
TYPE II, CLASS A | (5) 24" SELECT MATERIAL, TYPE A |
| (2) STE-1 TACK COAT | (6) SELECT MATERIAL, TYPE B |
| (3) 3" ASPHALT TREATED BASE | (7) 3" TOPSOIL |
| (4) 4" SUBBASE, GRADING C | (8) RIPRAP, CLASS III |

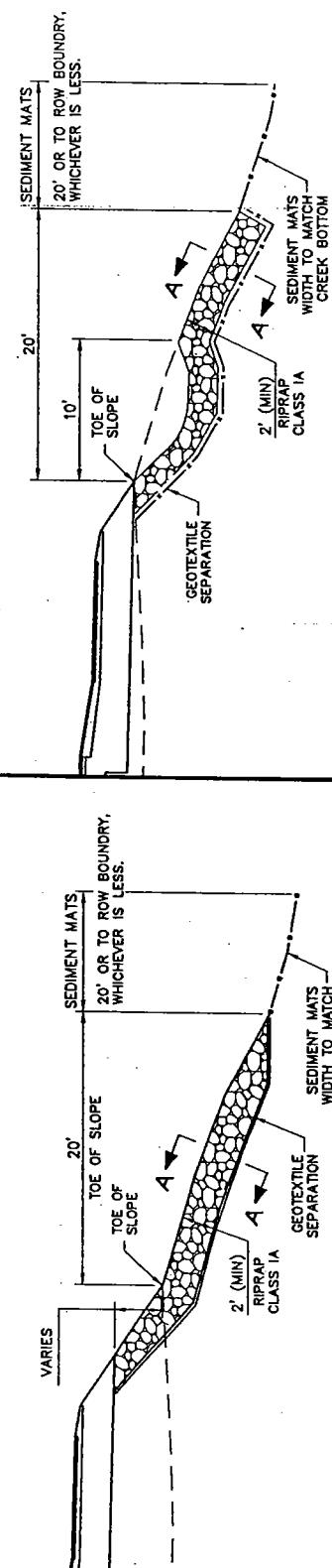
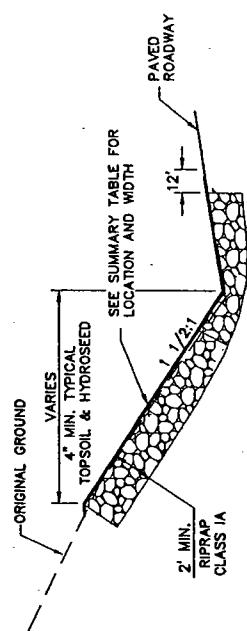
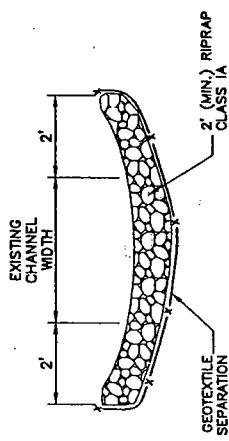
SOUTH TONGASS HIGHWAY

South Tongass Highway

POA-2003-66-2
Tongass Narrows
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**NOTES:**

1. IF ROCK IS ENCOUNTERED ROCK AT PIPE INLET OR OUTLET SHALL BE EXCAVATED TO MATCH EXISTING CHANNEL WIDTH AND NO RIPRAP OR RIPRAP LINER SHALL BE REQUIRED.
2. LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD ADJUSTMENT AS DIRECTED BY THE ENGINEER.

ROCK FLUME DETAIL**TYPE II****TYPE III****SECTION A-A**

ADJACENT PROPERTY OWNERS:
SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:
TONGASS NARROWS
GEORGE INLET

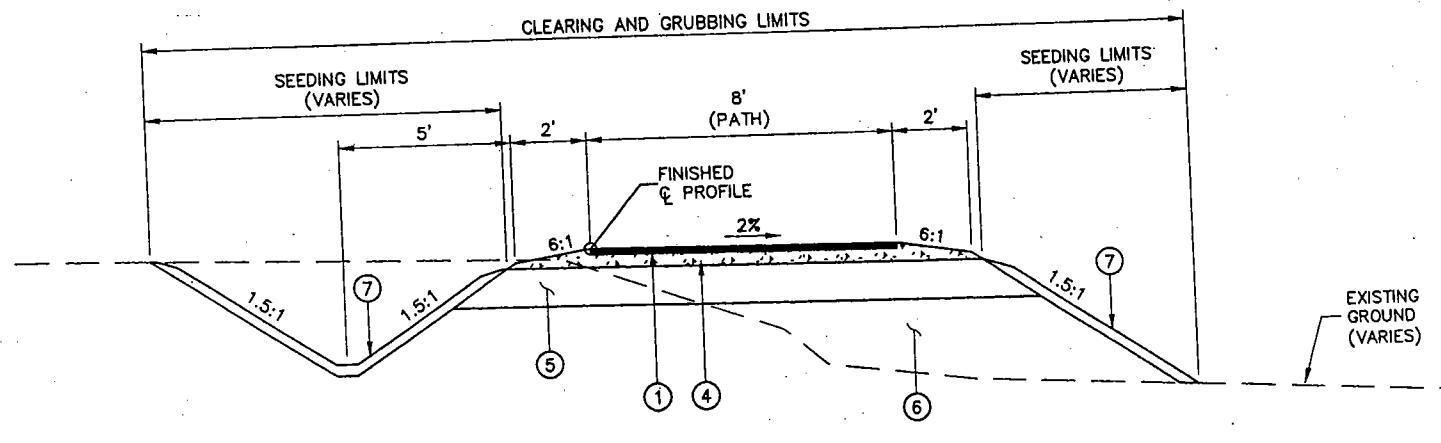
SLOPE STABILIZATION DETAILS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

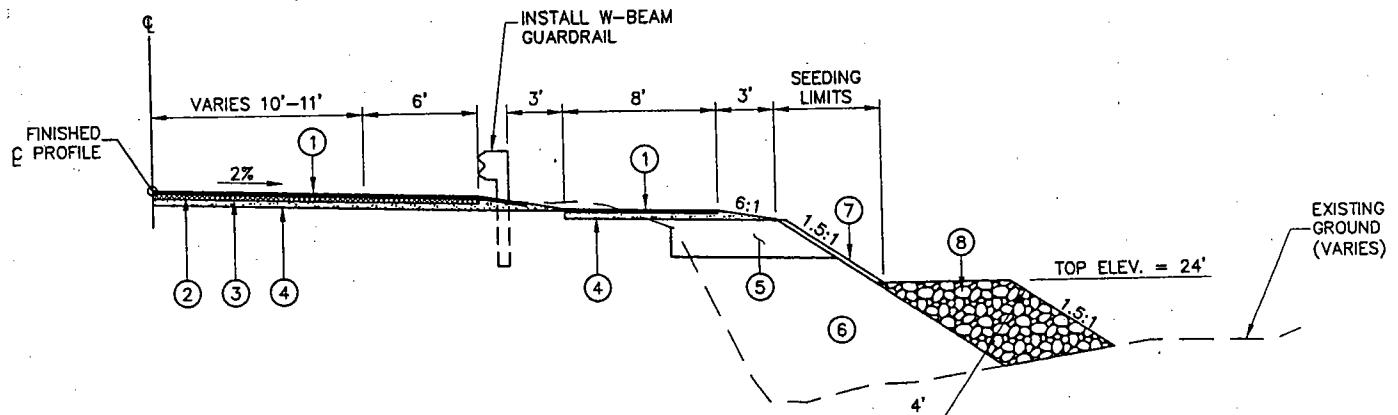
SOUTH TONGASS HIGHWAY

South Tongass Highway

POA-2003-66-2
Tongass Narrows
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TYPICAL SECTION
SEPARATED PATHWAY



TYPICAL SECTION
GUARDRAIL INSTALLATION

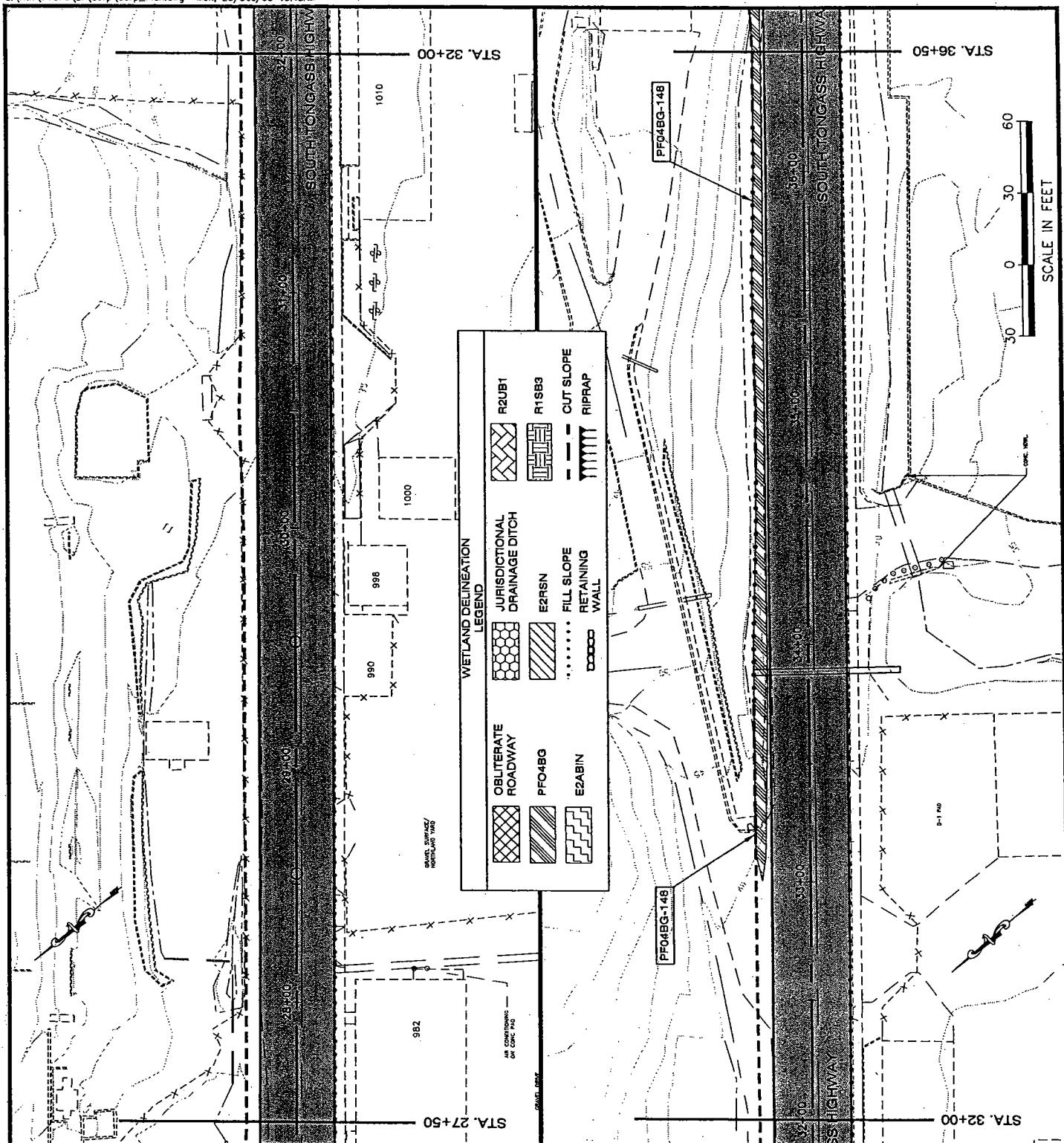
LEGEND

- (1) 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
- (2) STE-1 TACK COAT
- (3) 3" ASPHALT TREATED BASE
- (4) 4" SUBBASE, GRADING C
- (5) 24" SELECT MATERIAL, TYPE A
- (6) SELECT MATERIAL, TYPE B
- (7) 3" TOPSOIL
- (8) RIPRAP, CLASS III

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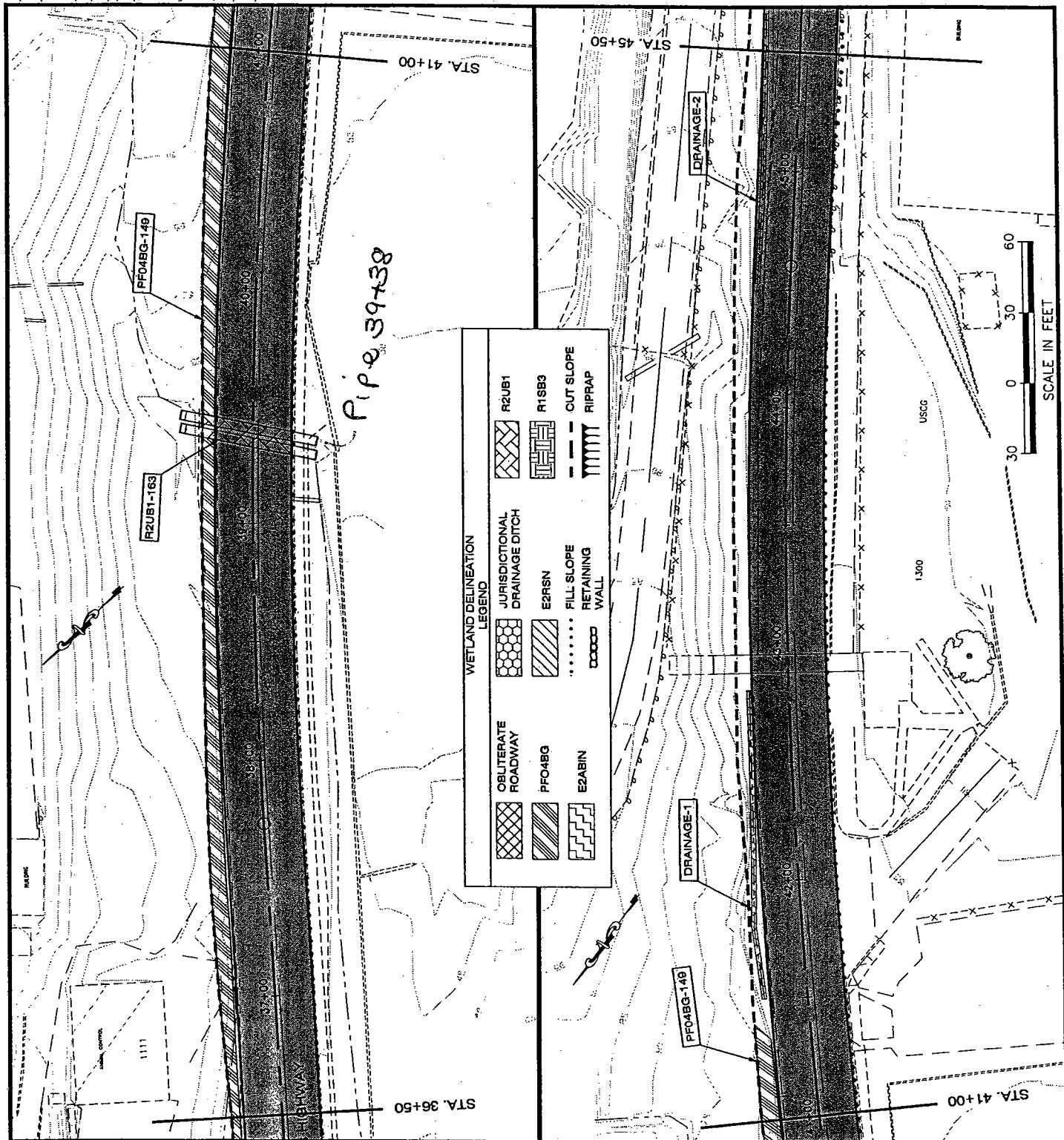
PROJECT LAYOUT PLAN

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

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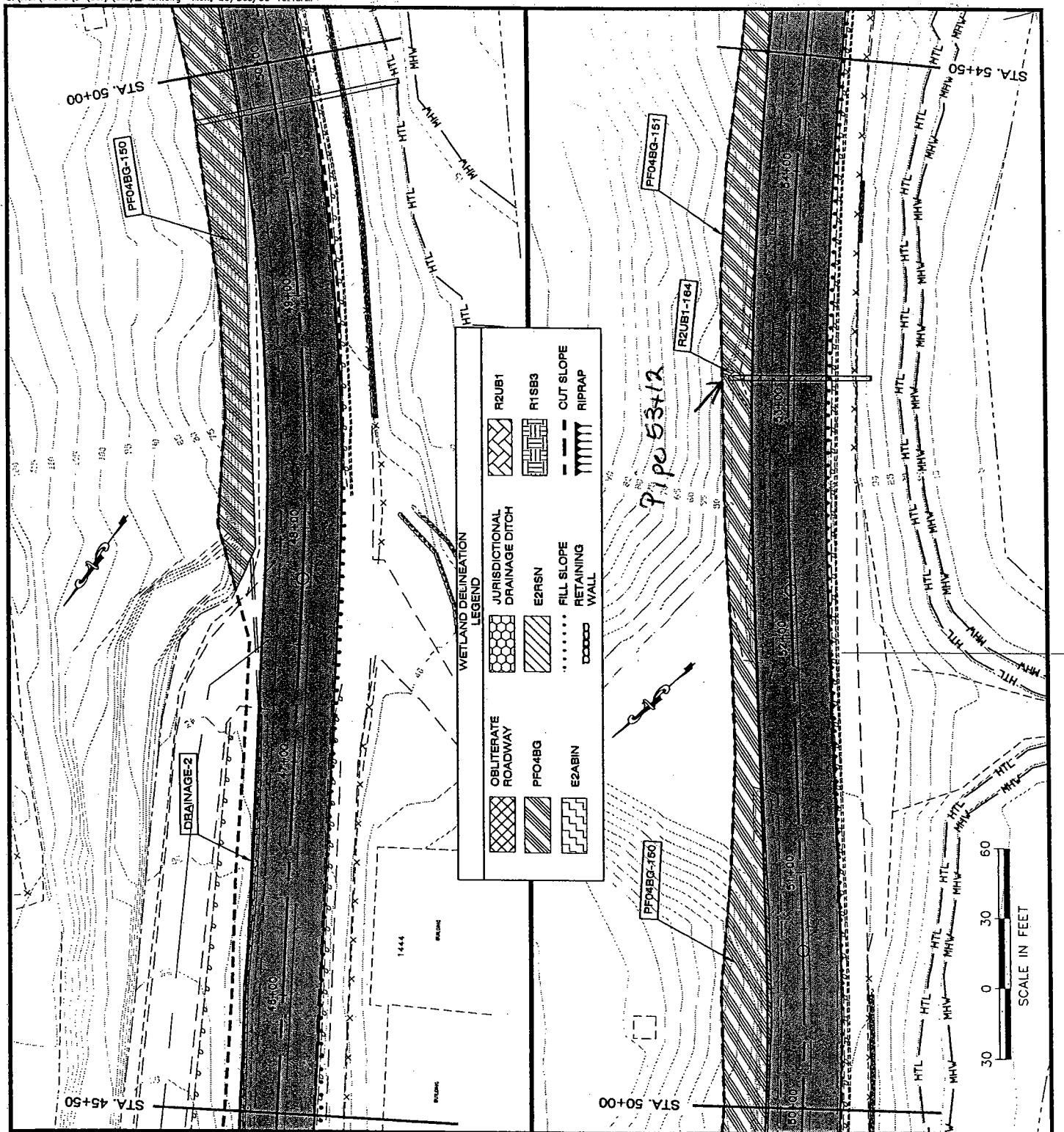
WATER BODY:
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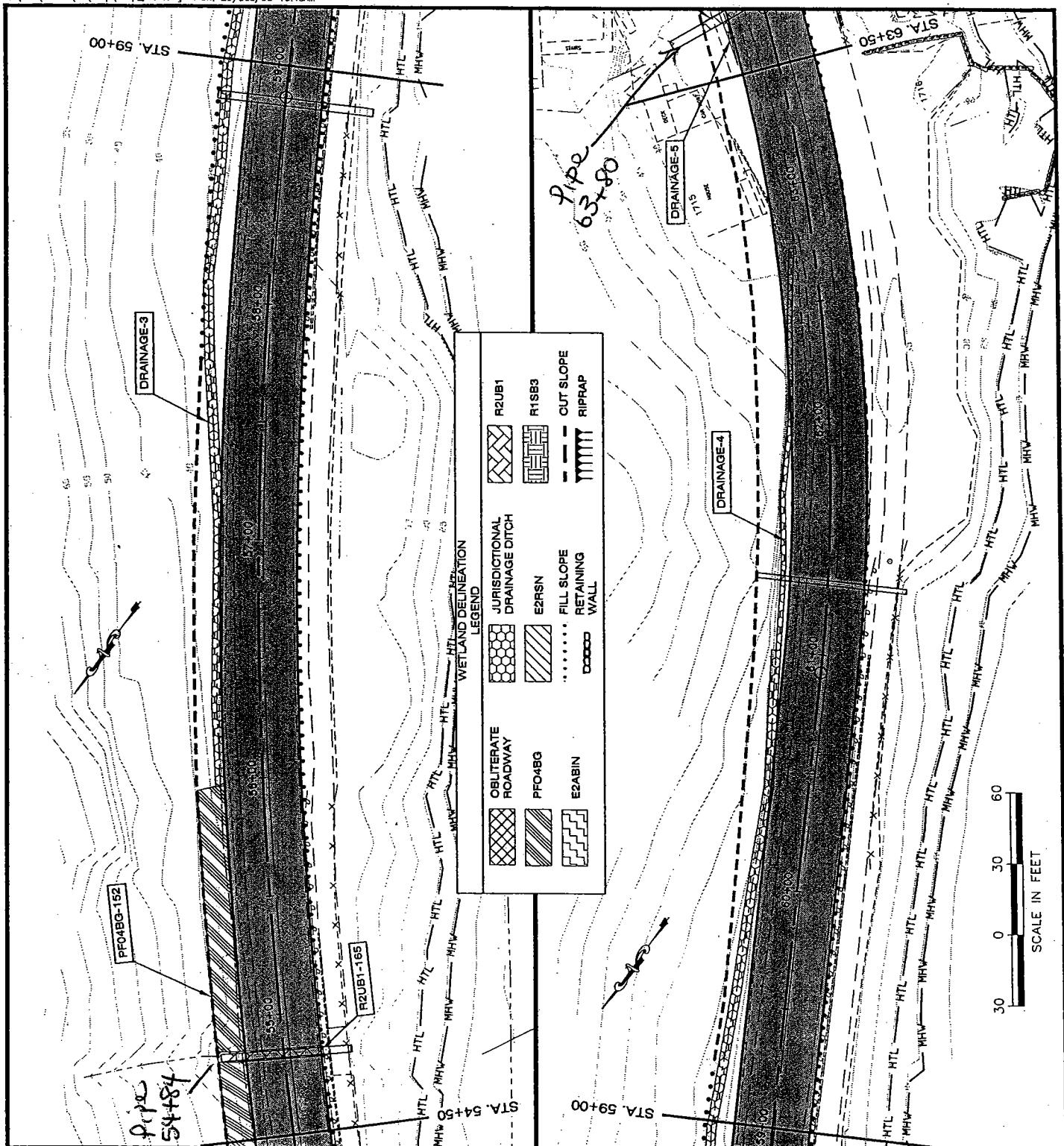
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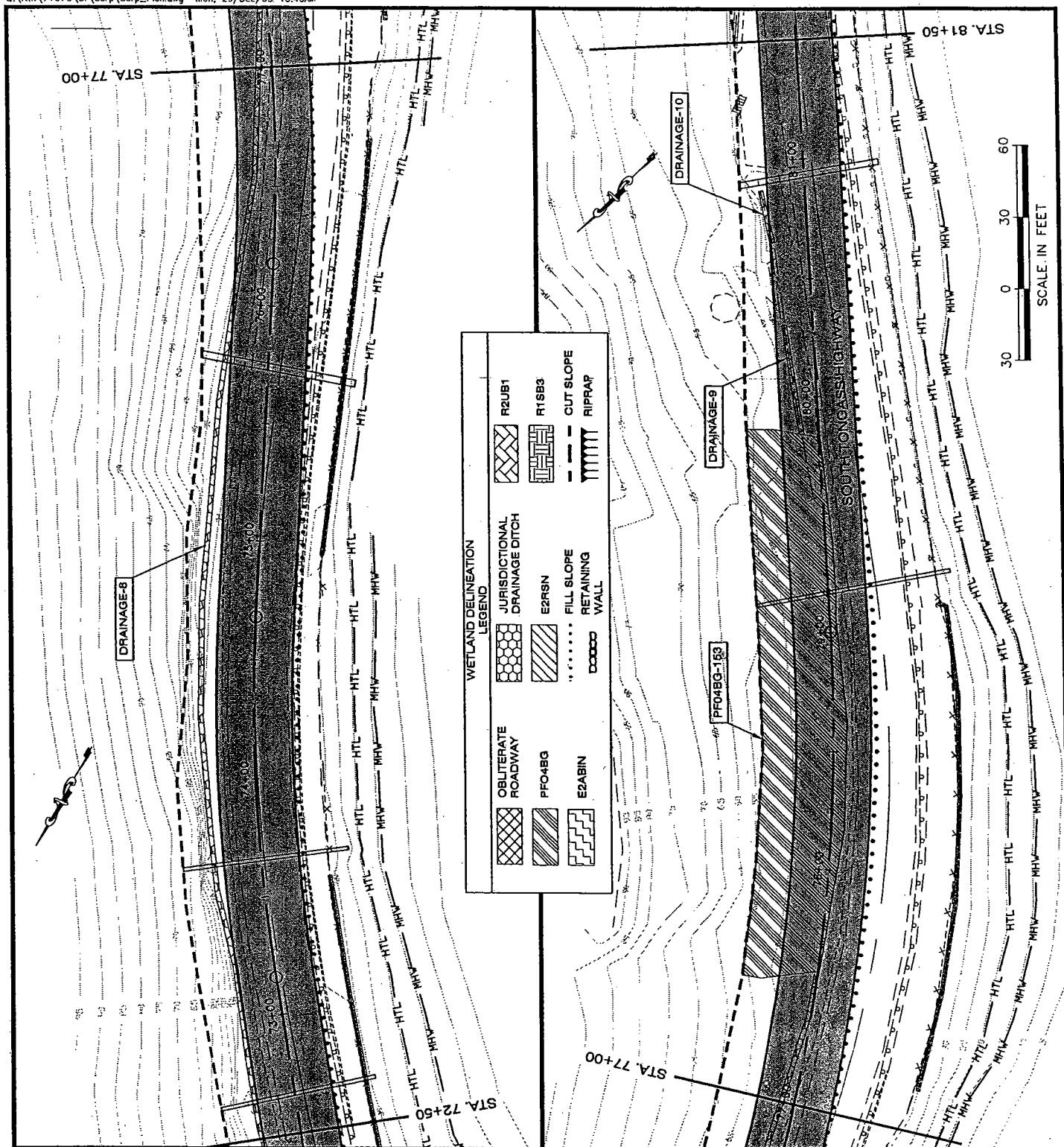
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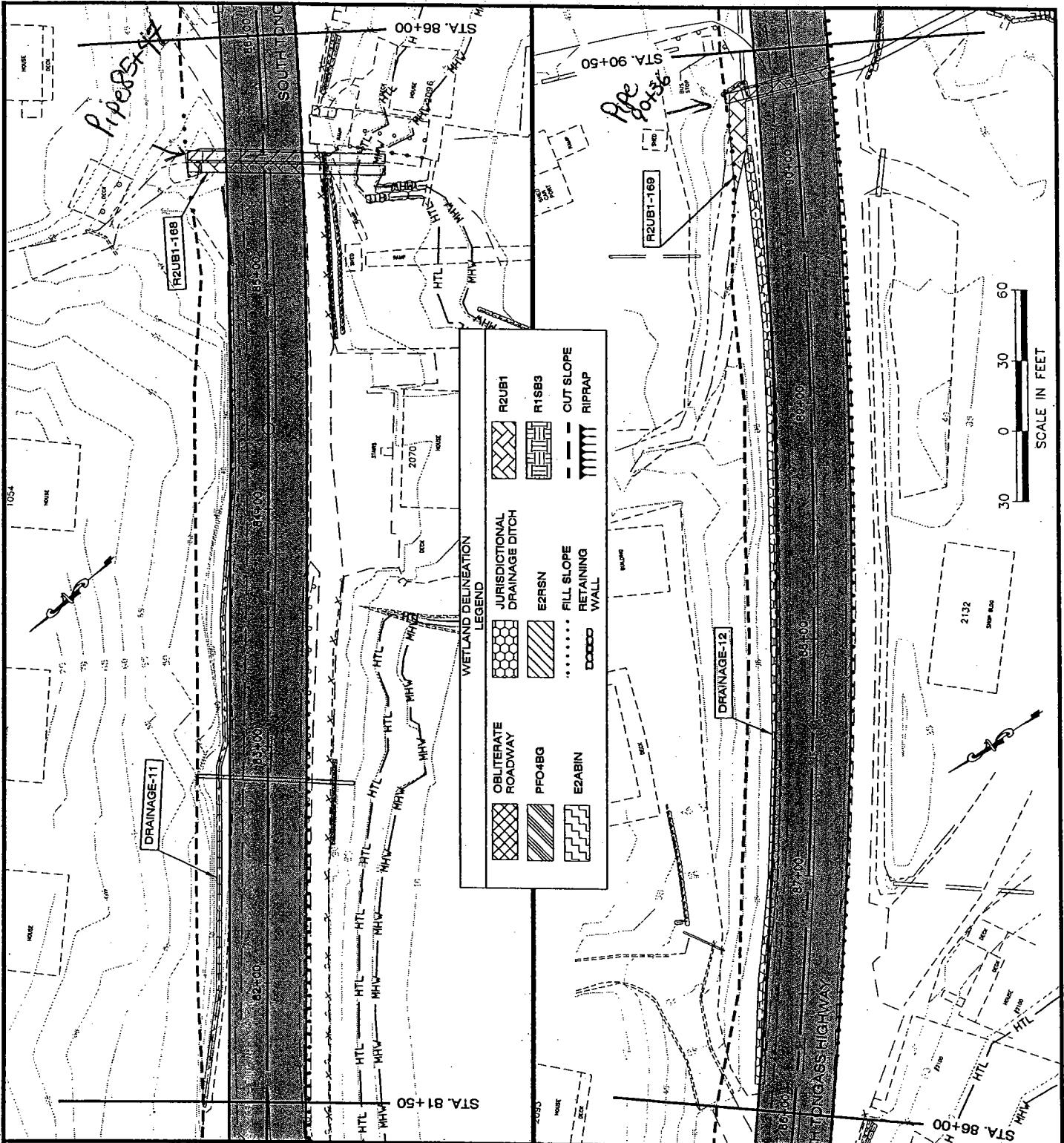
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SOUTH TONGASS HIGHWAY

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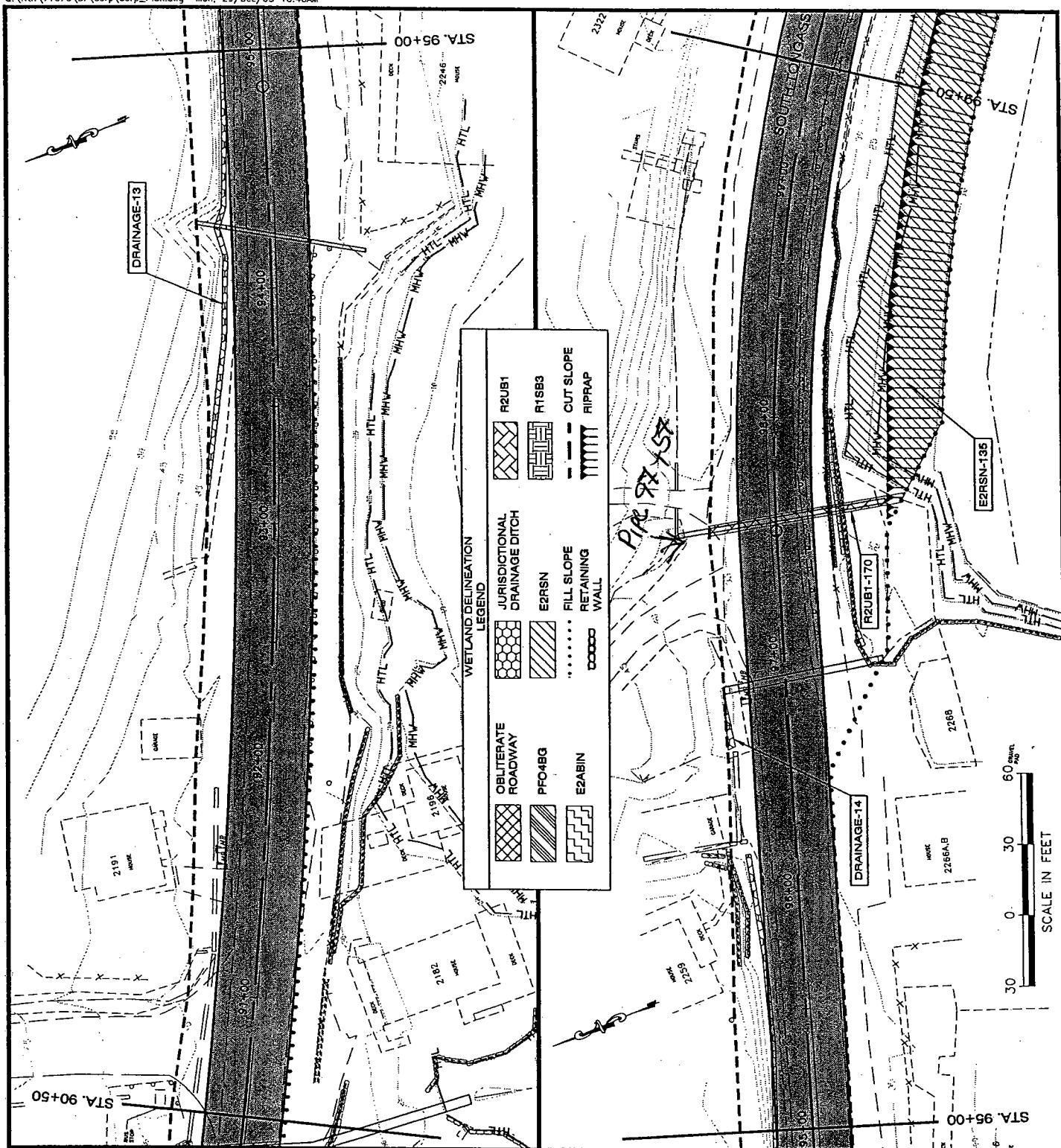
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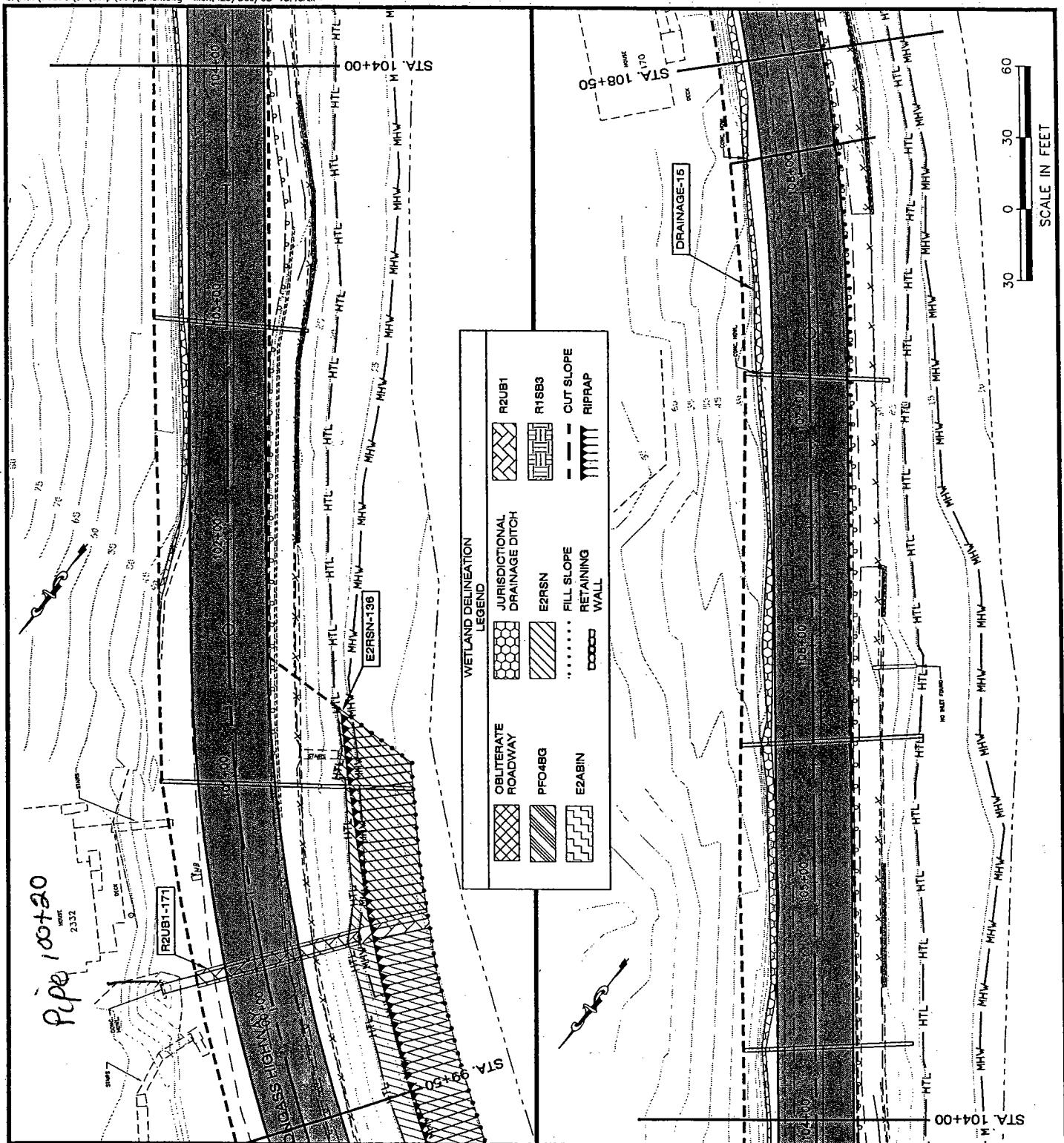
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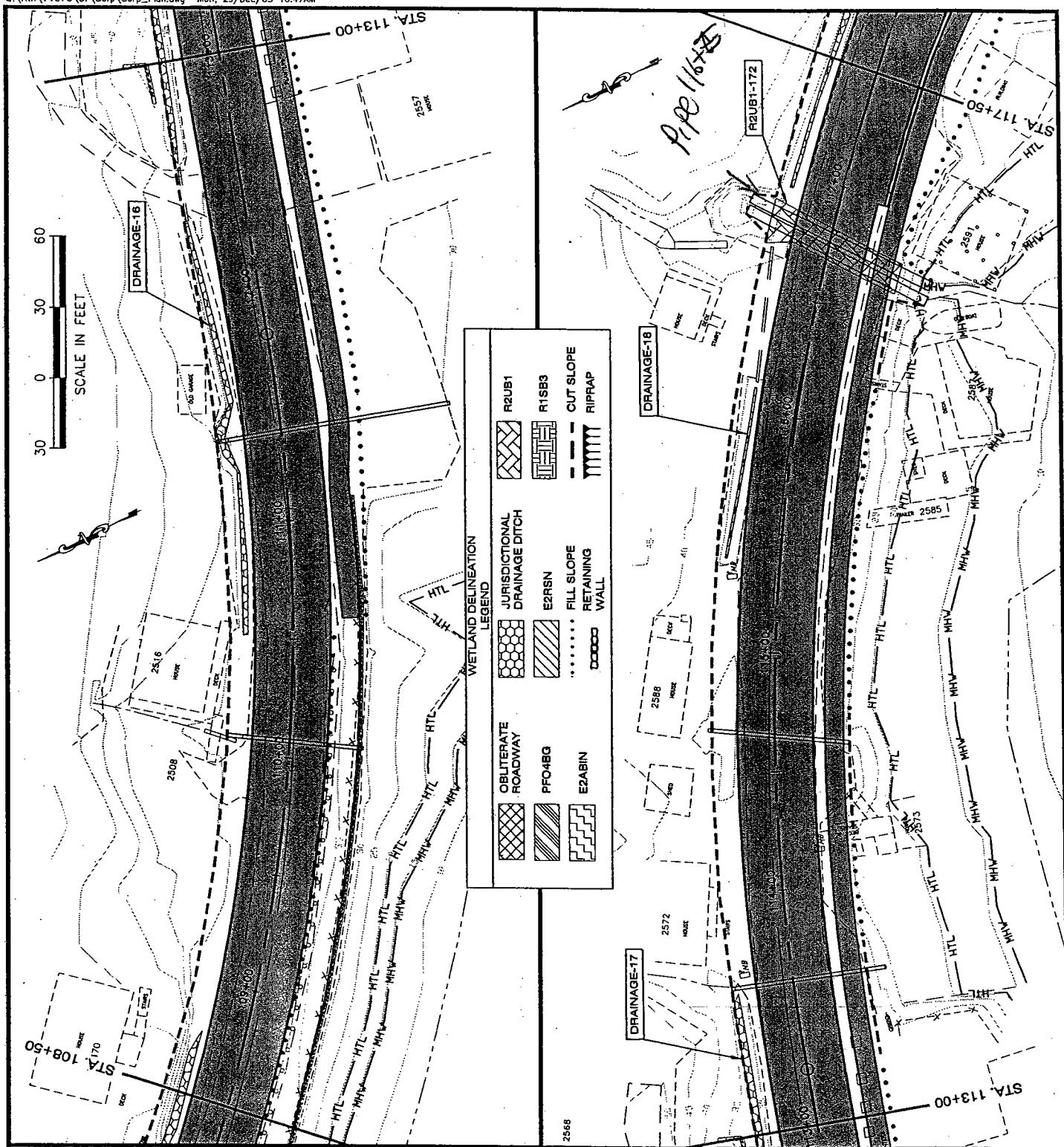
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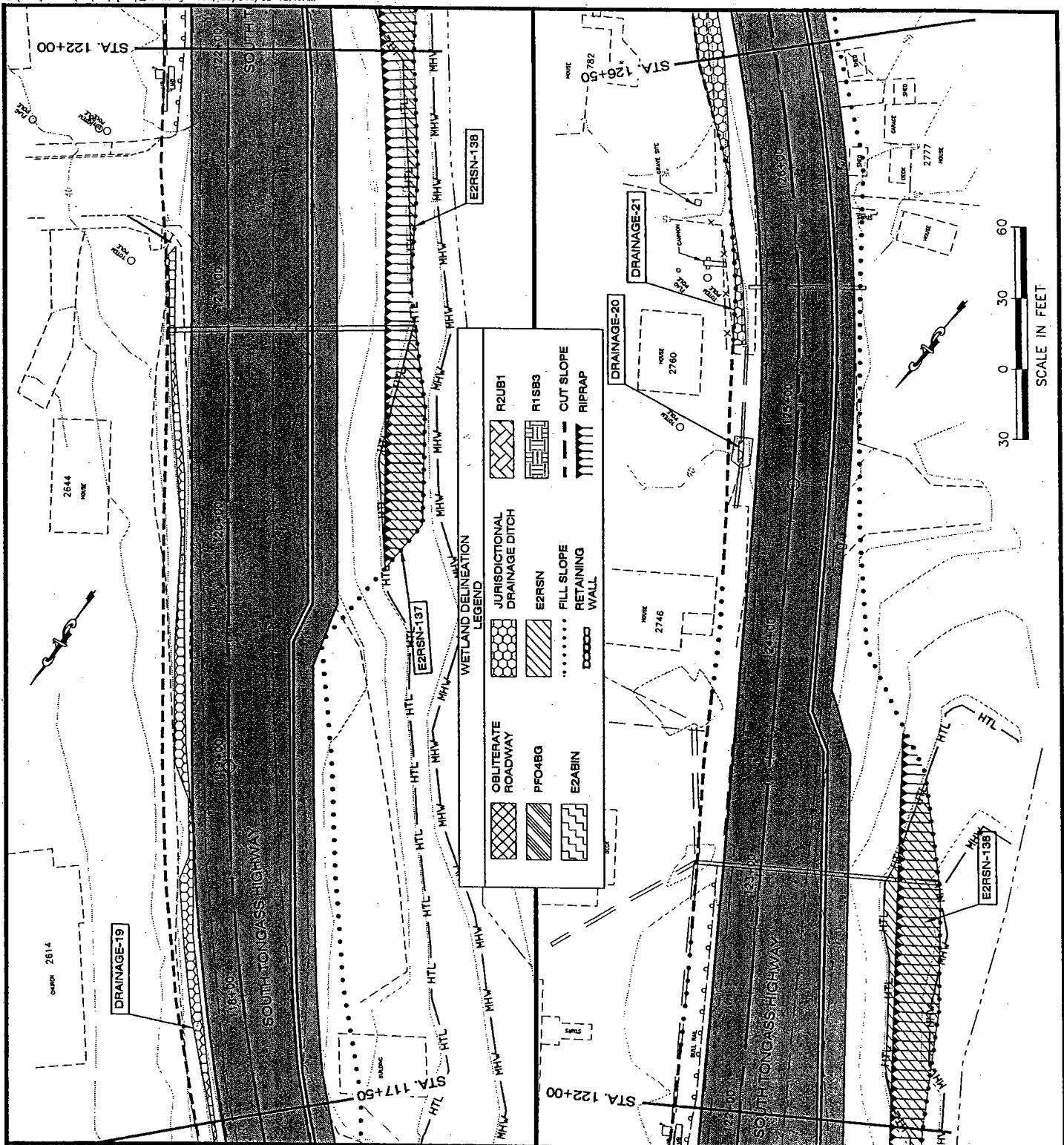
WATER BODY:
TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

South Tongass Highway



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

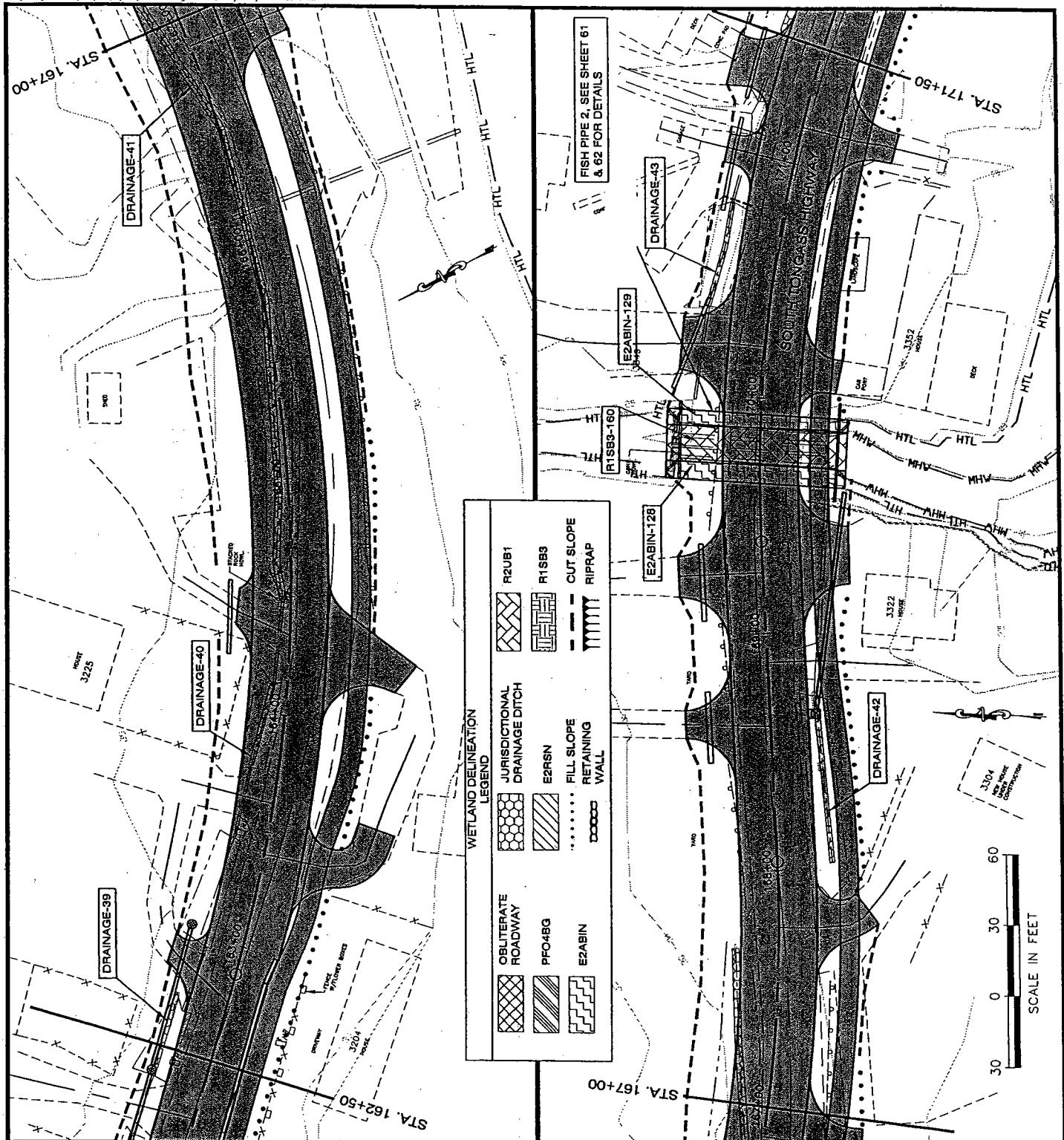
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Tongass Narrows
2-17-04



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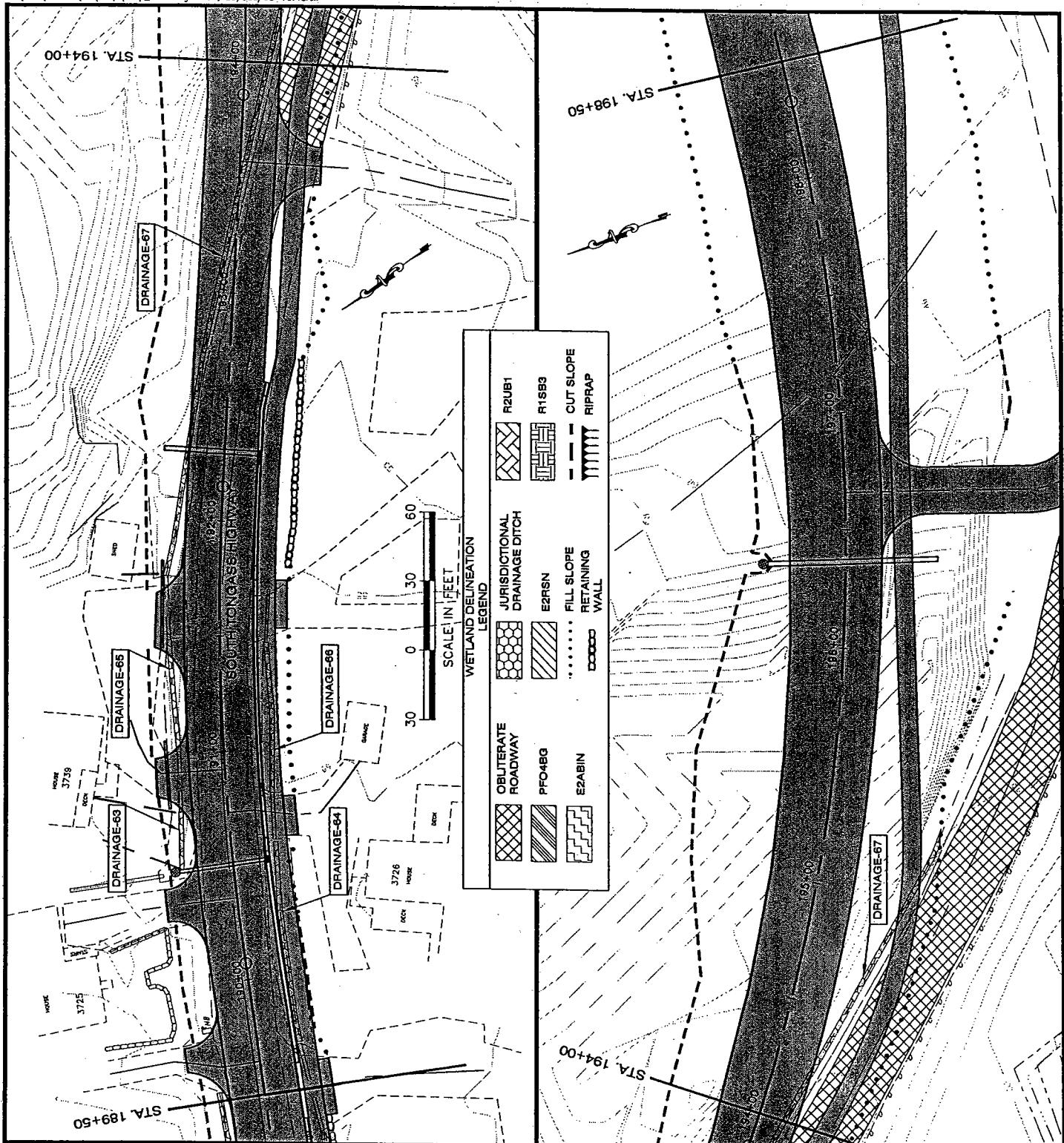
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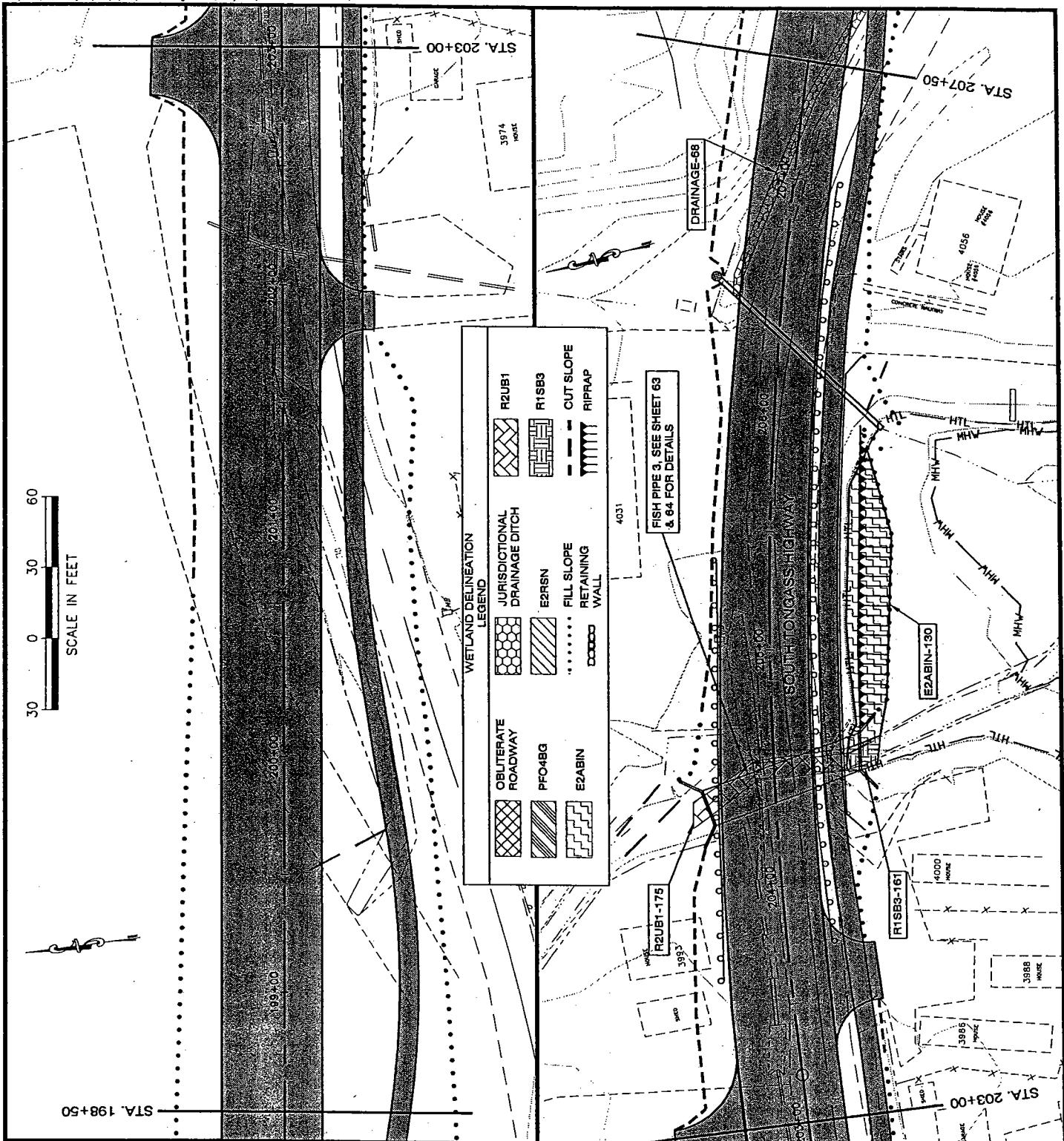
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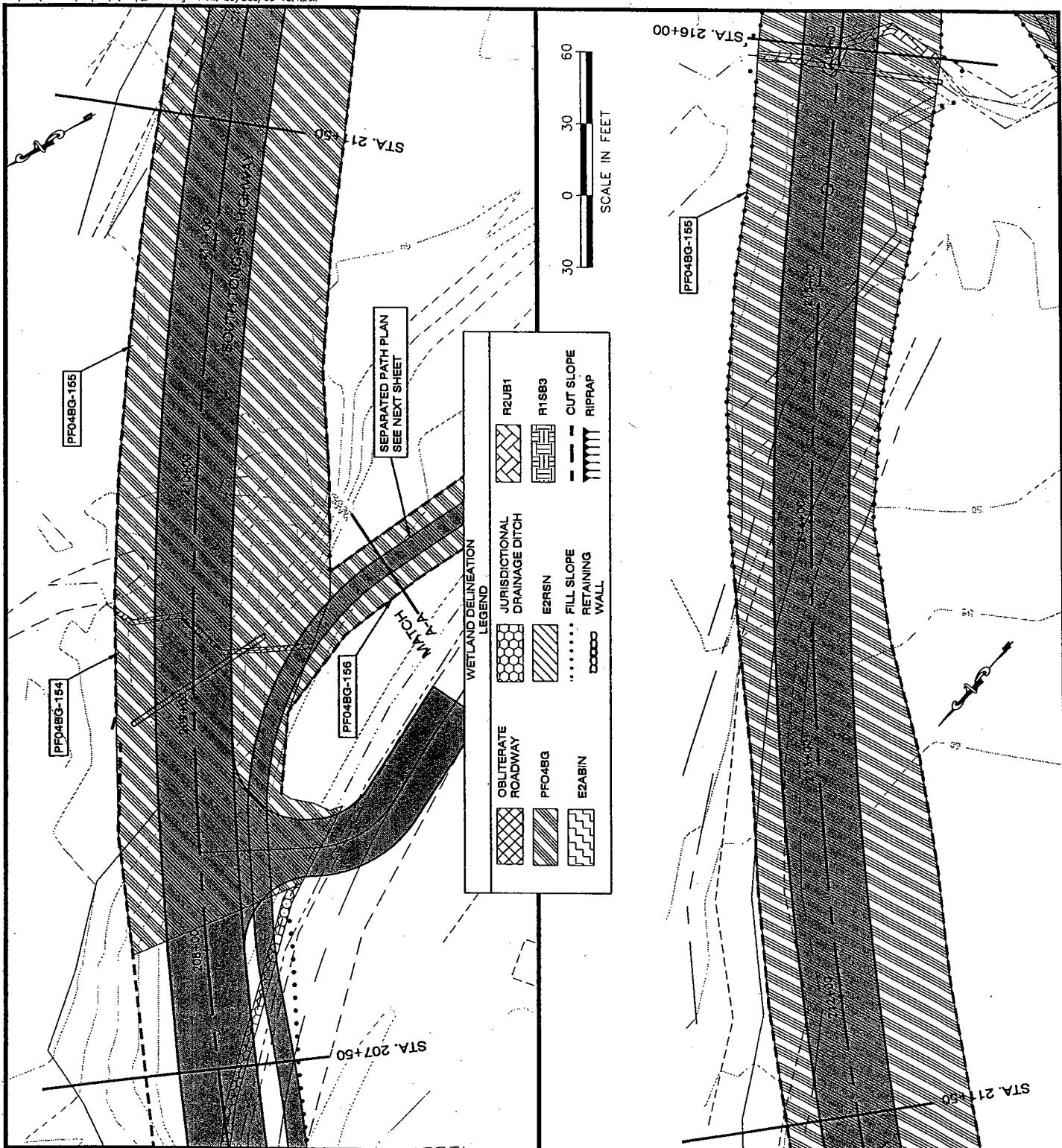
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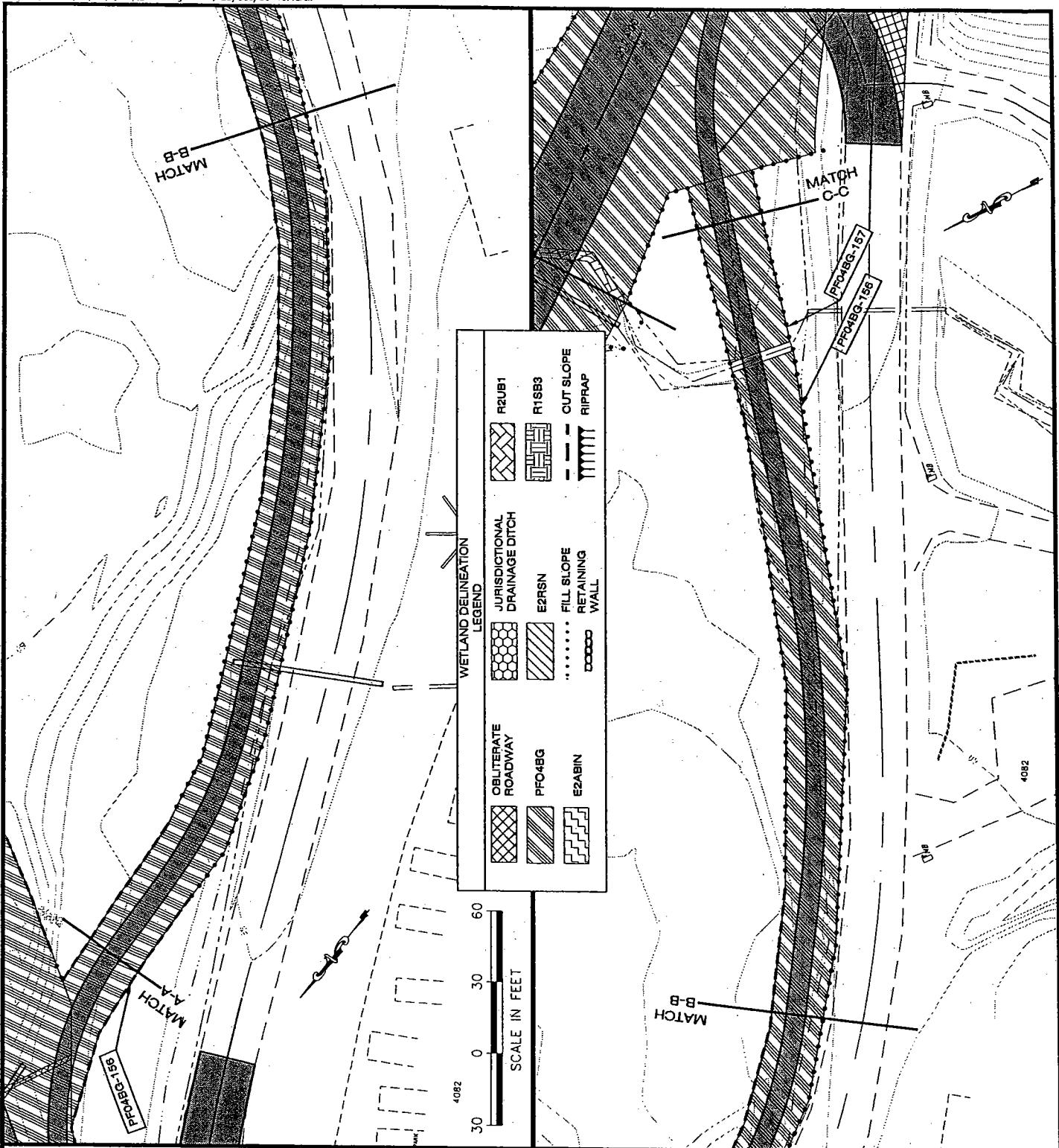
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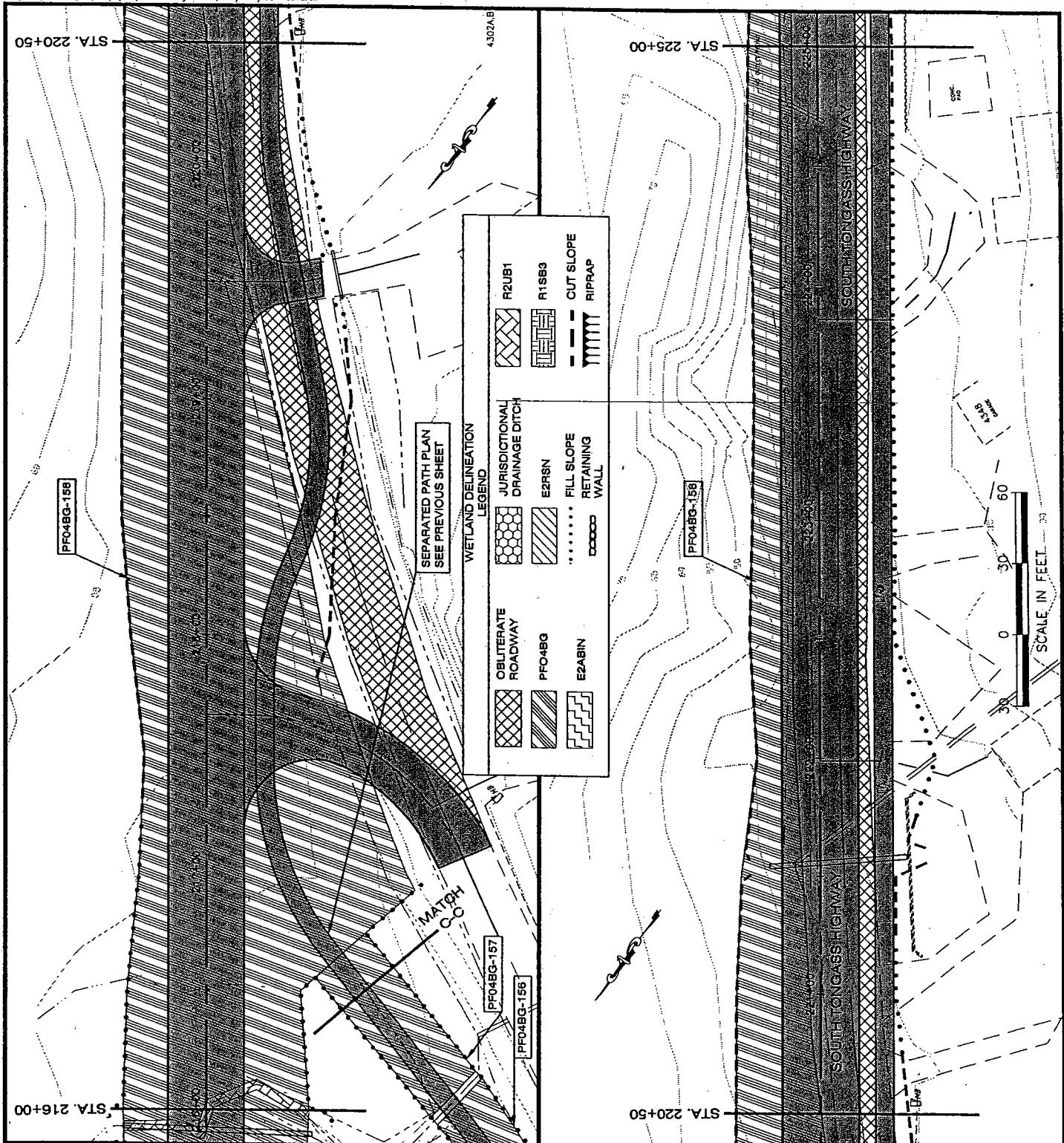
WATER BODY:
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GEORGE INLET

SEPARATED PATH LAYOUT PLAN

APPLICATION BY:
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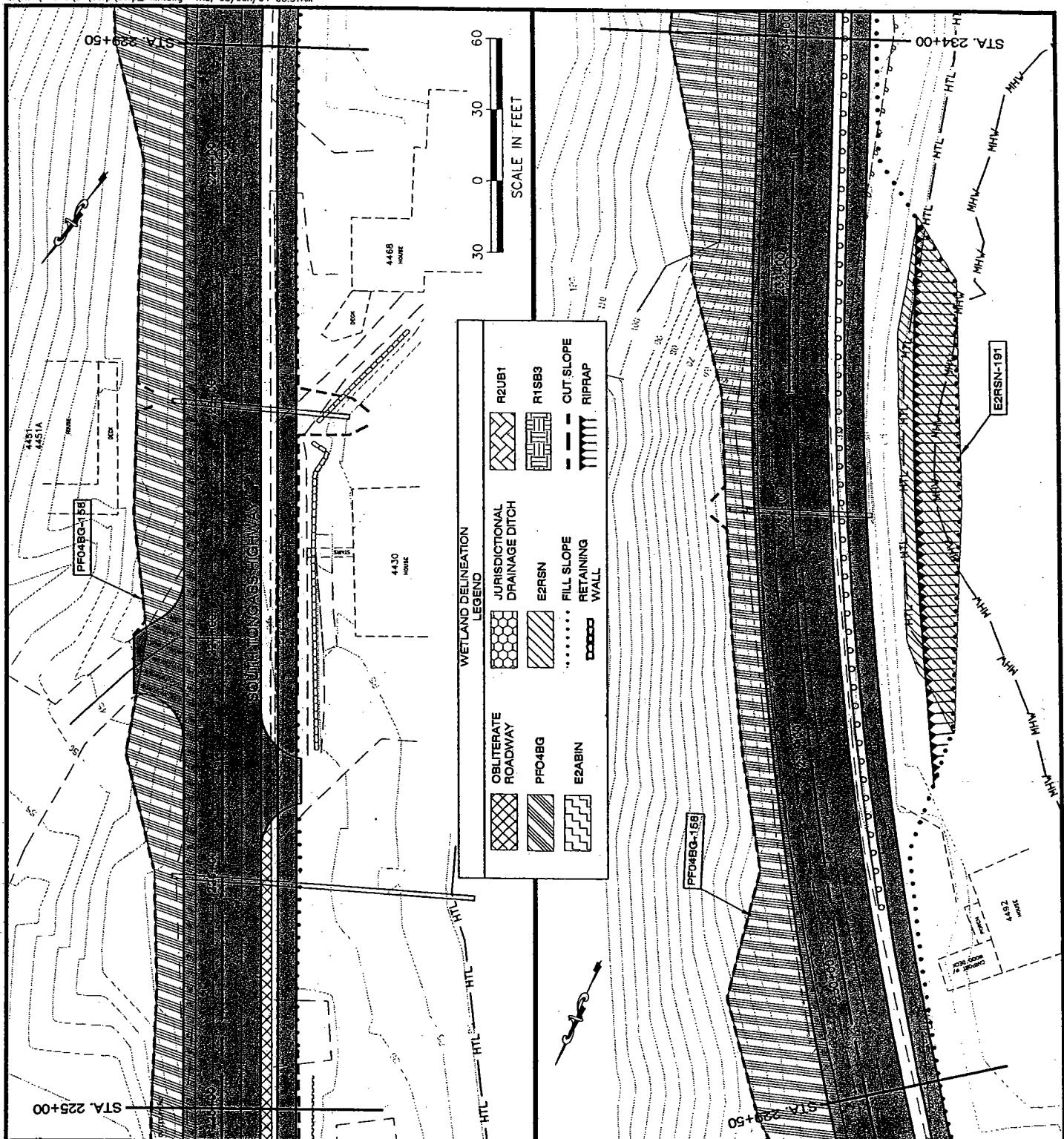
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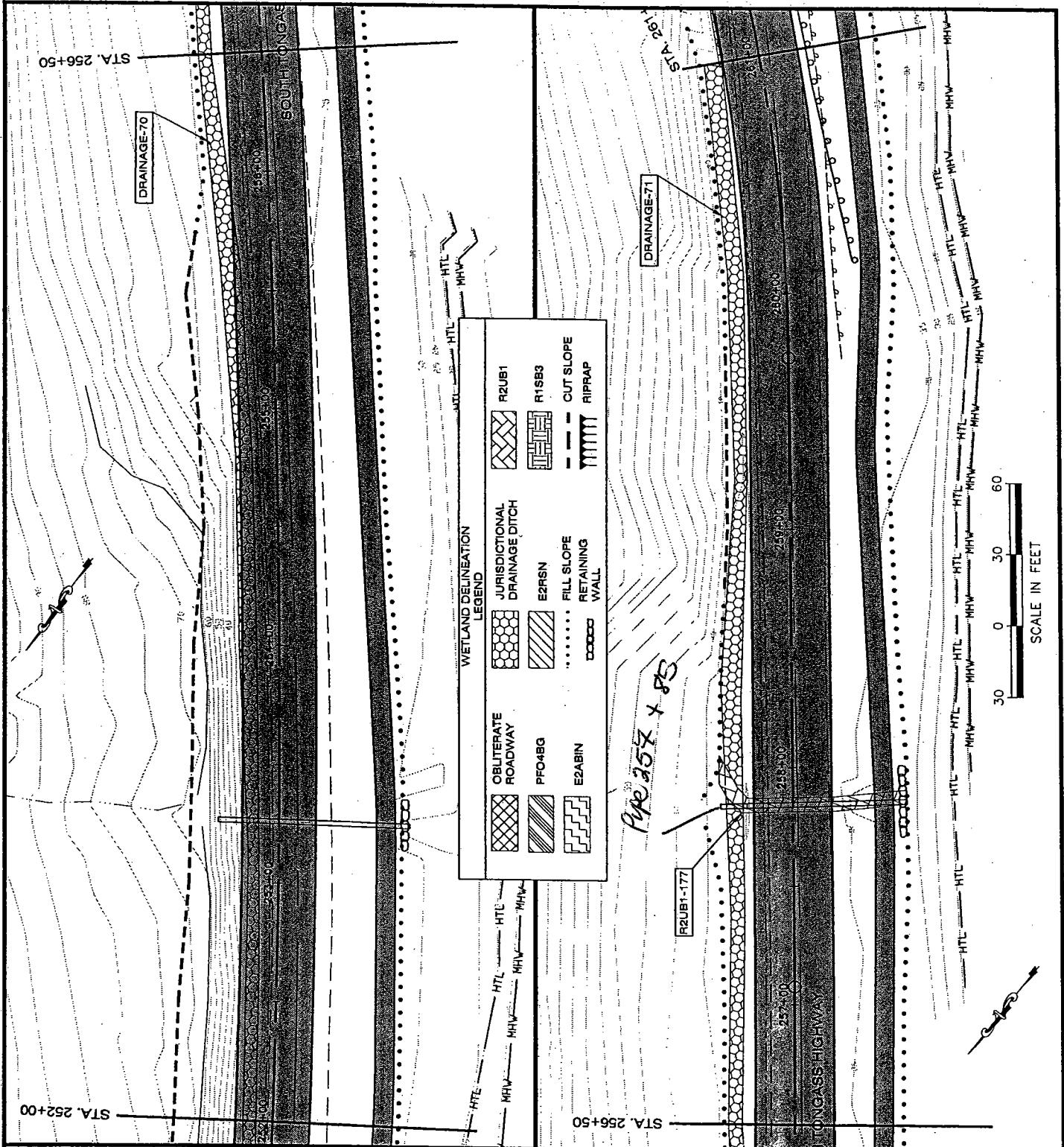
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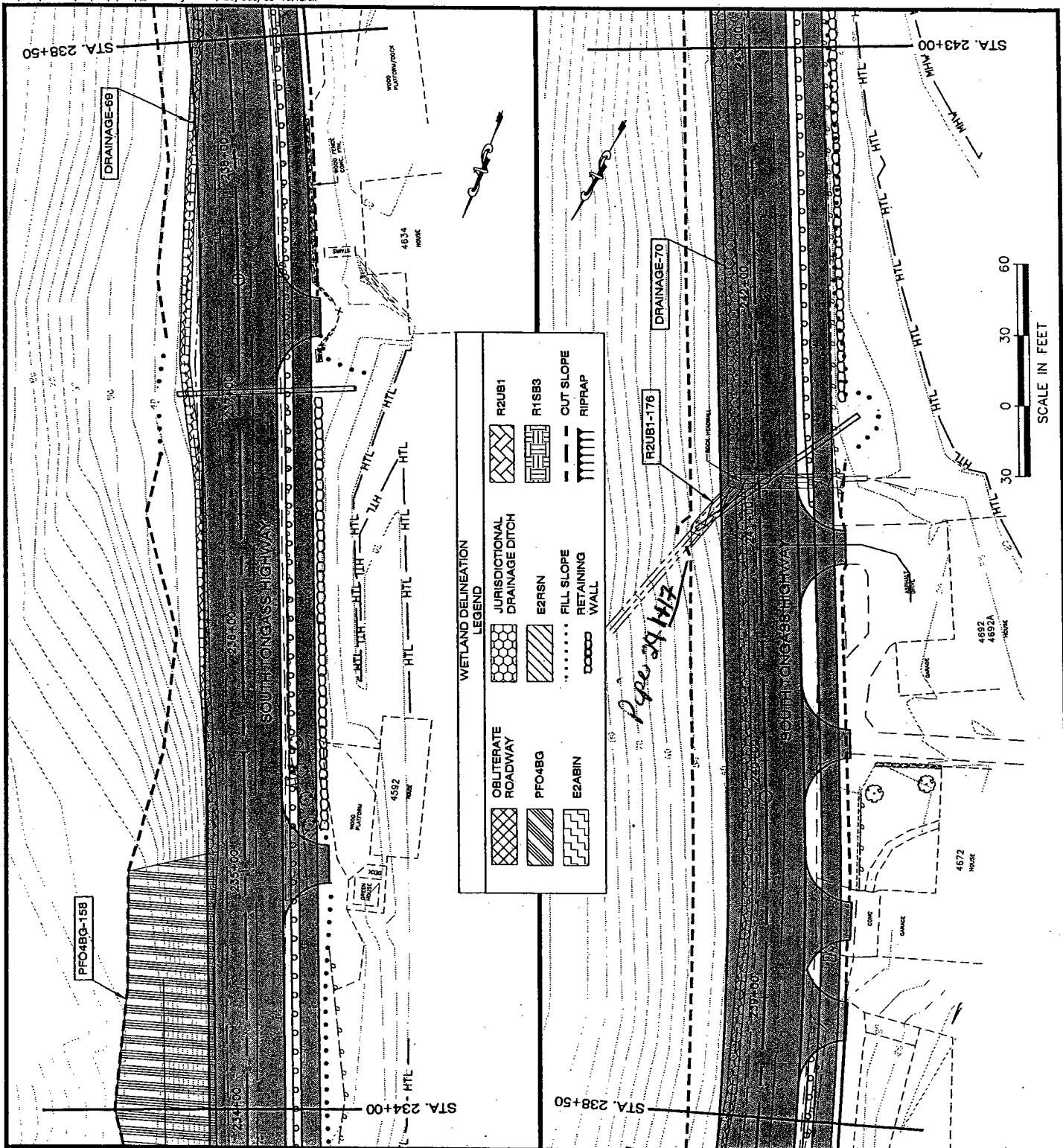


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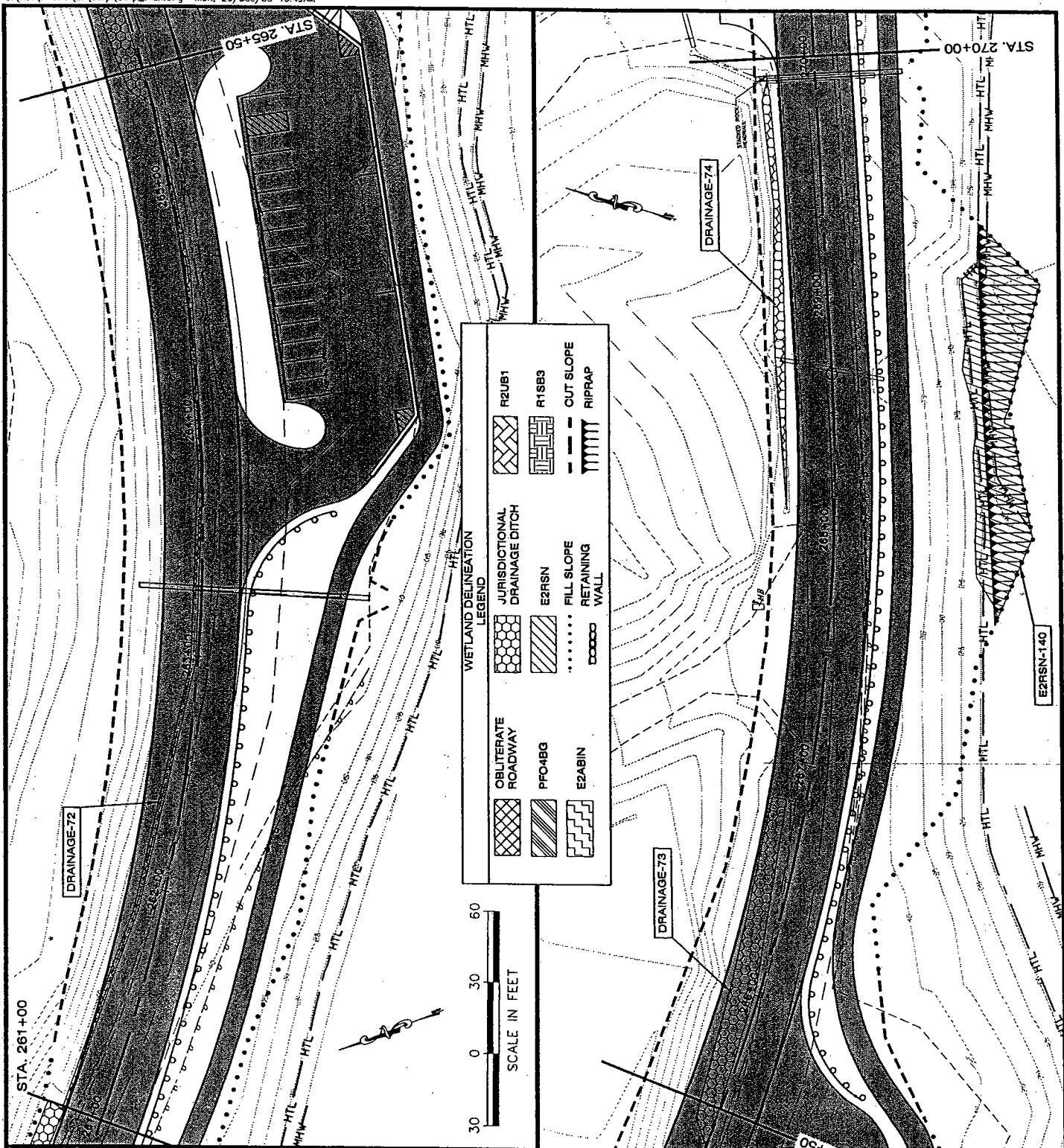
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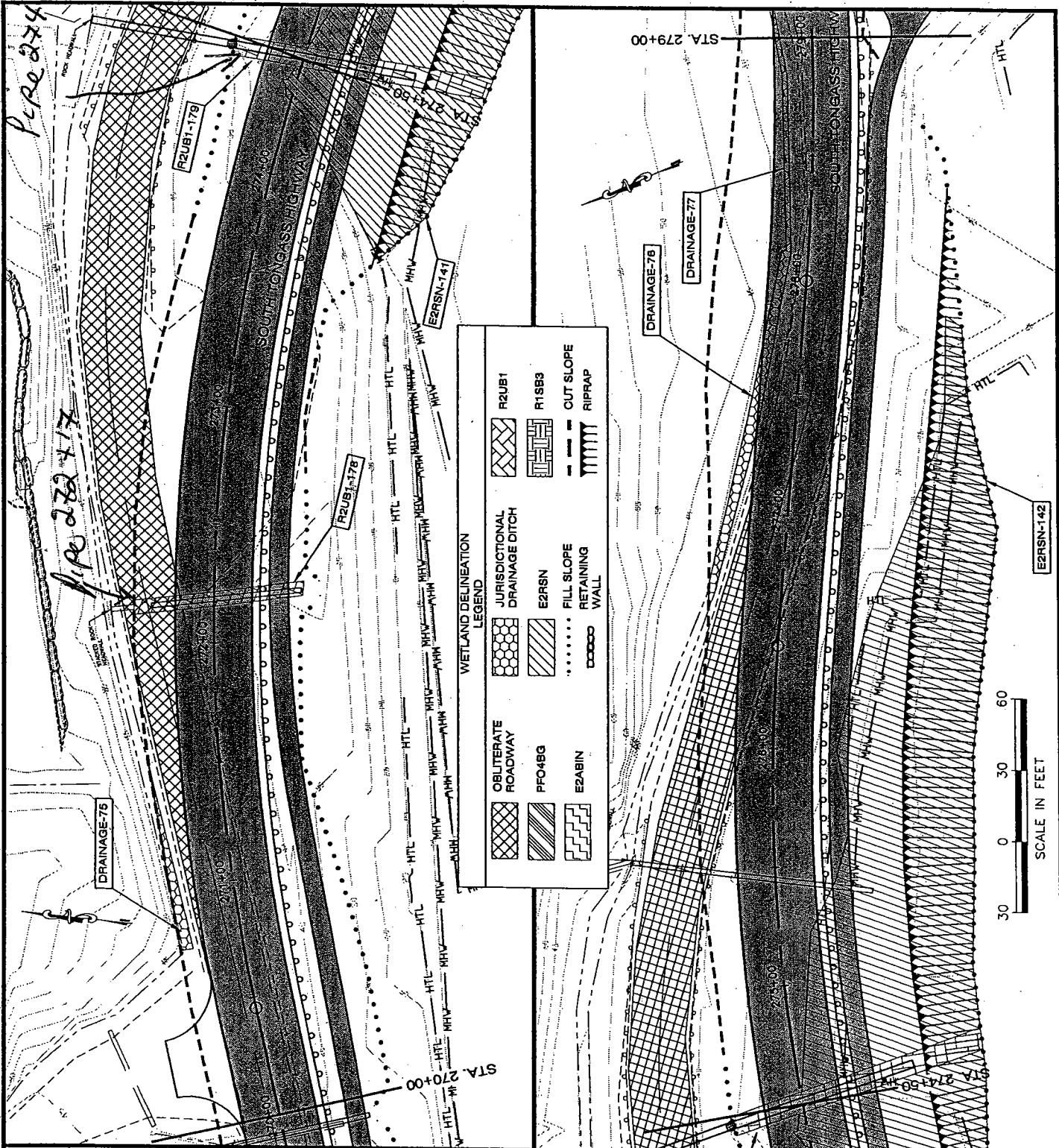
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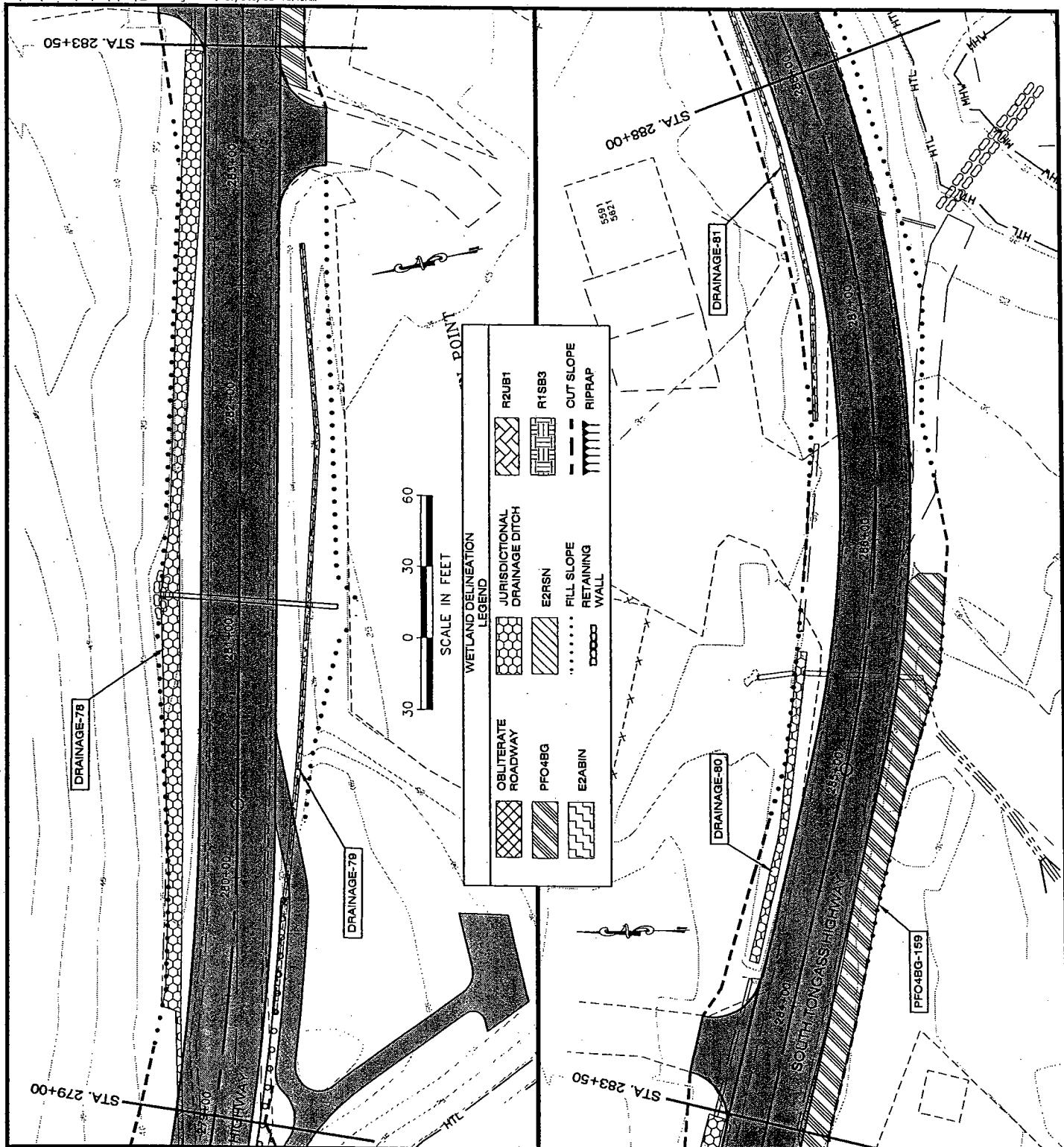
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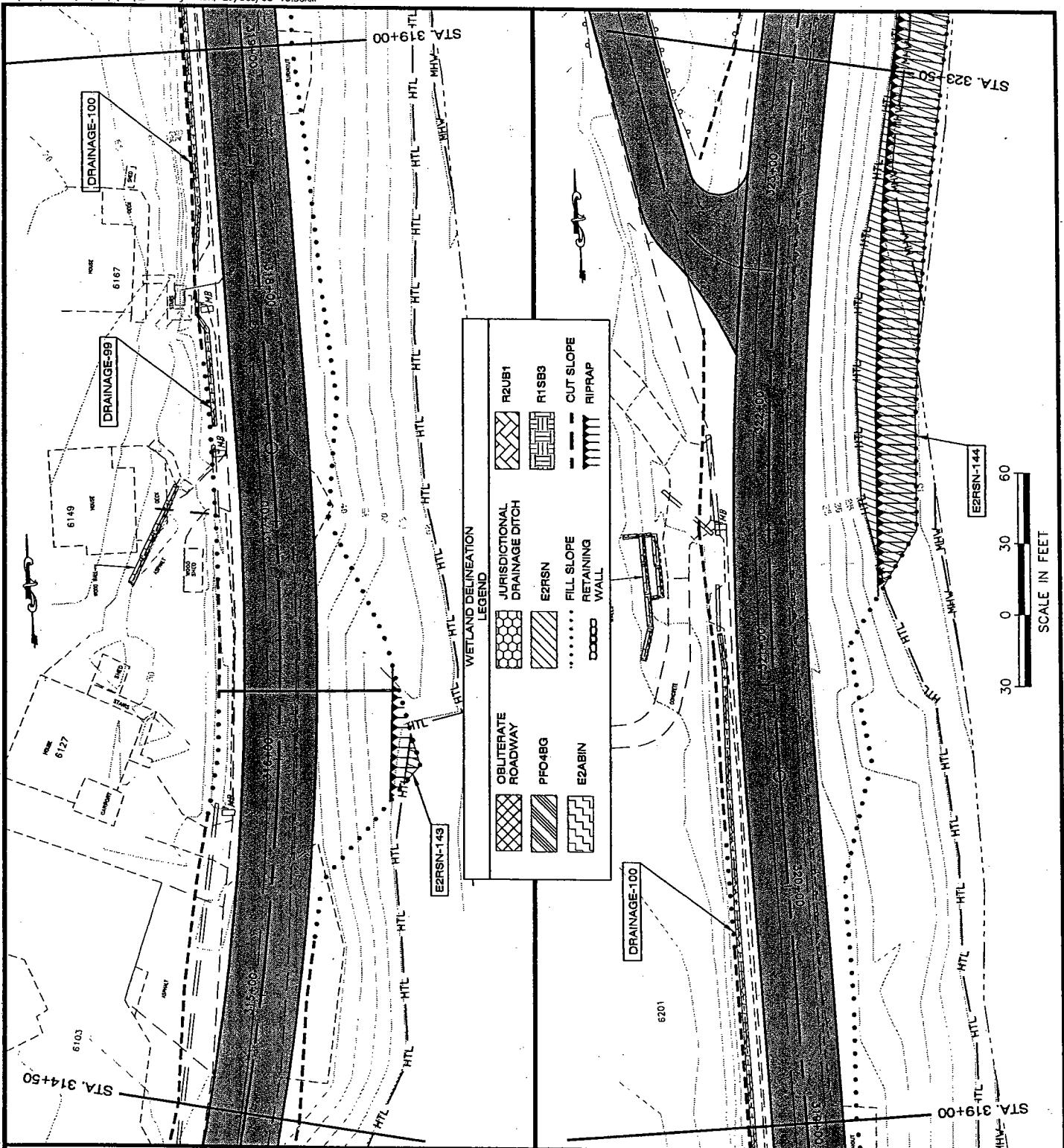
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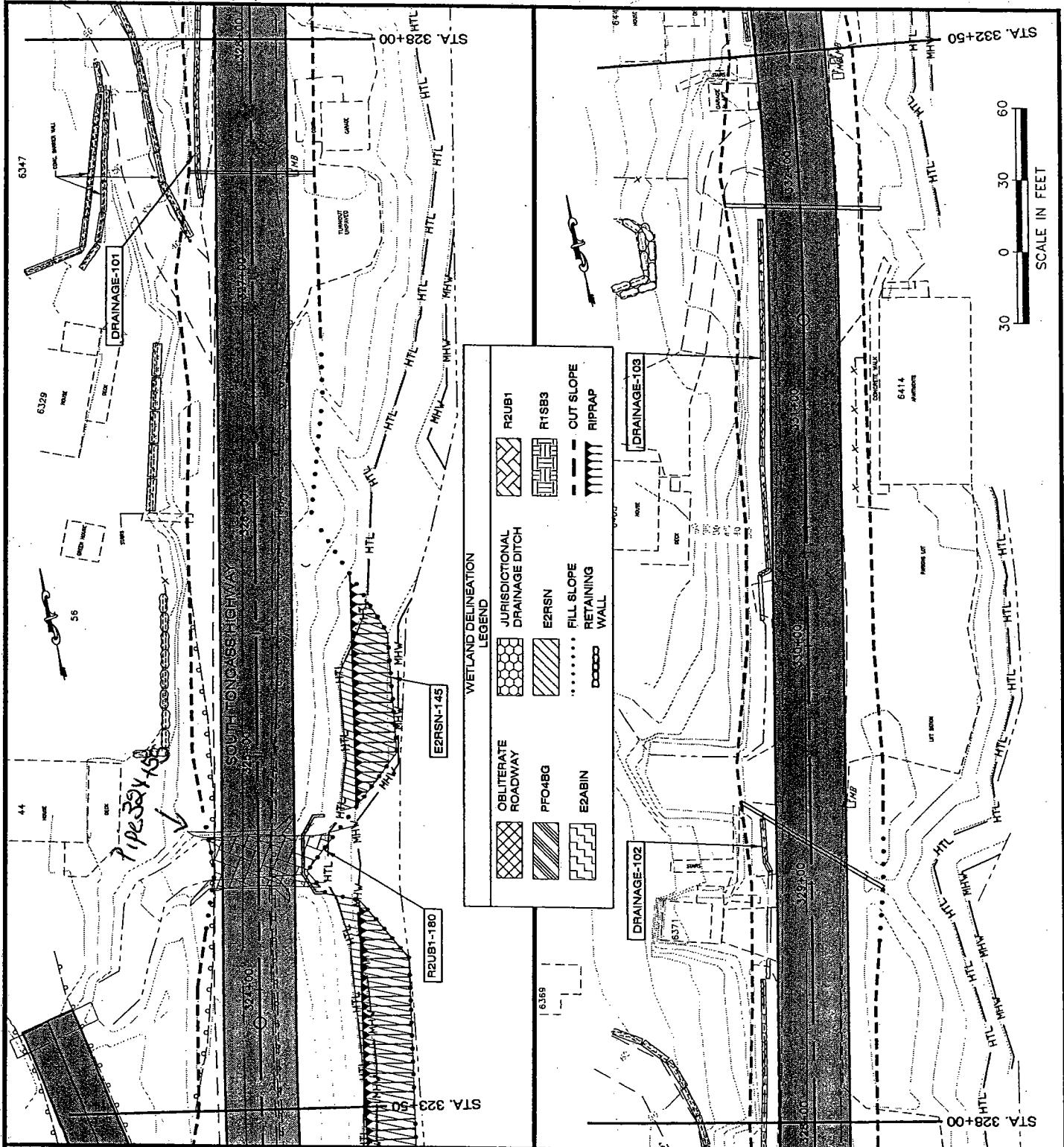
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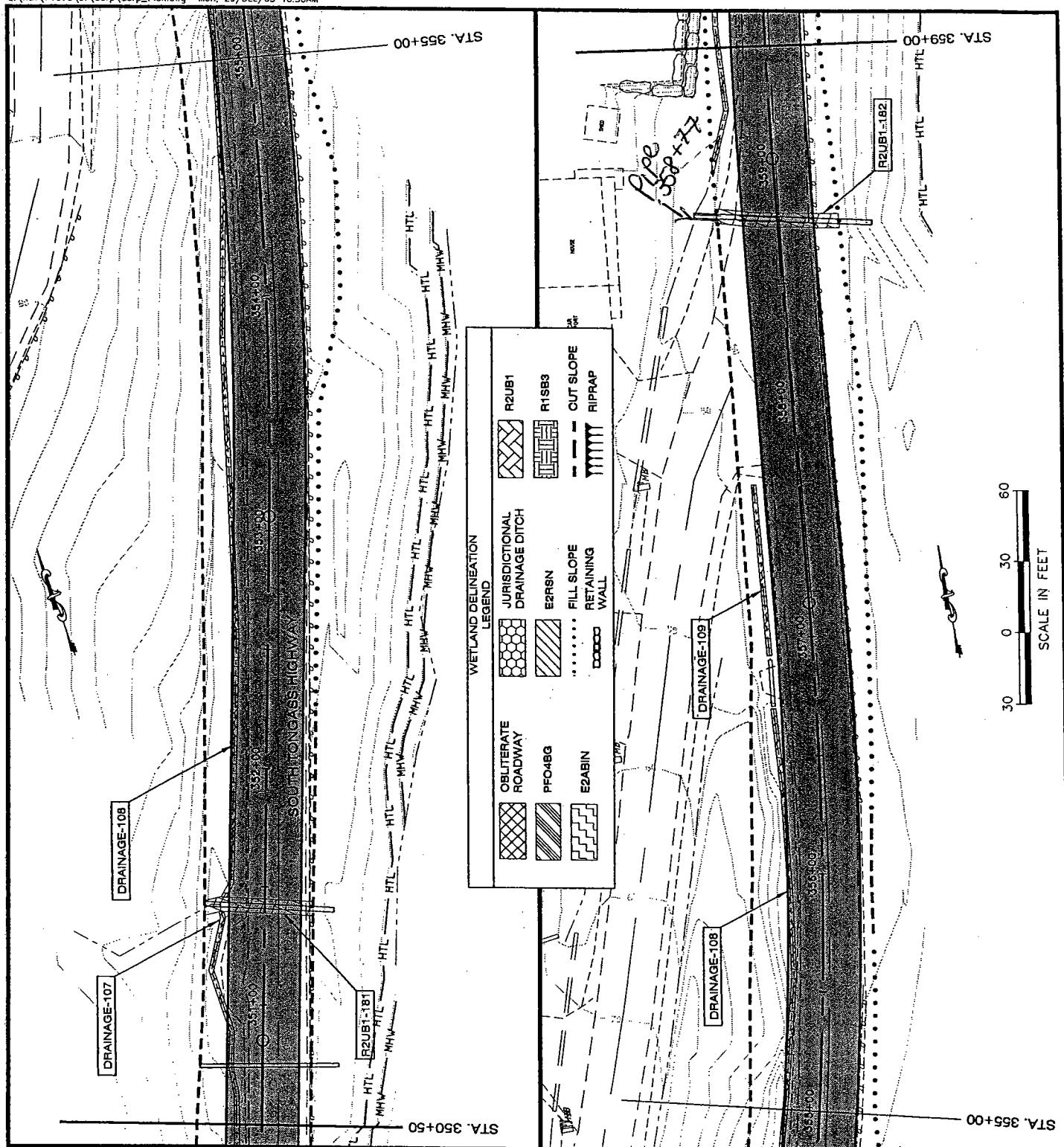
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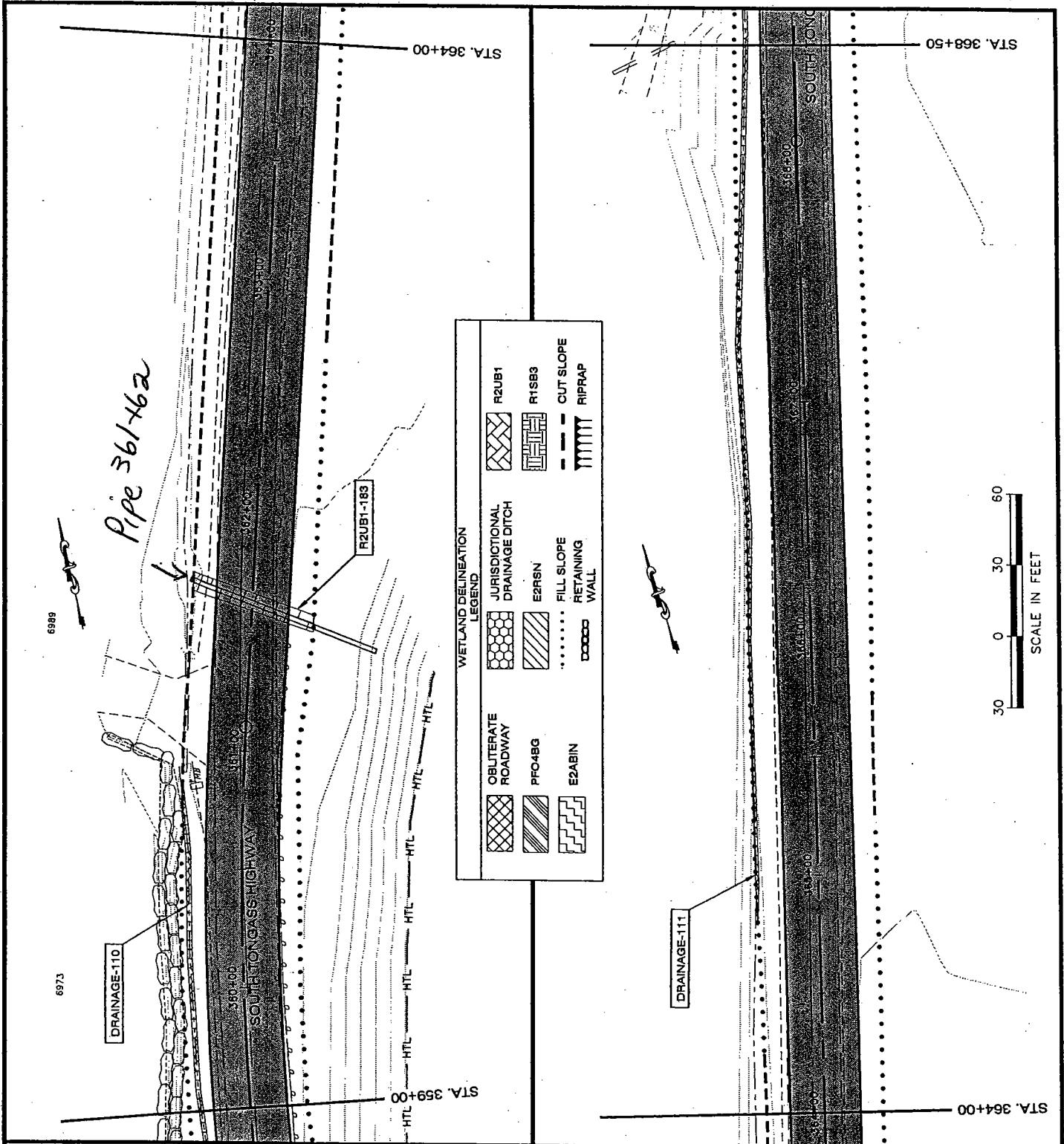
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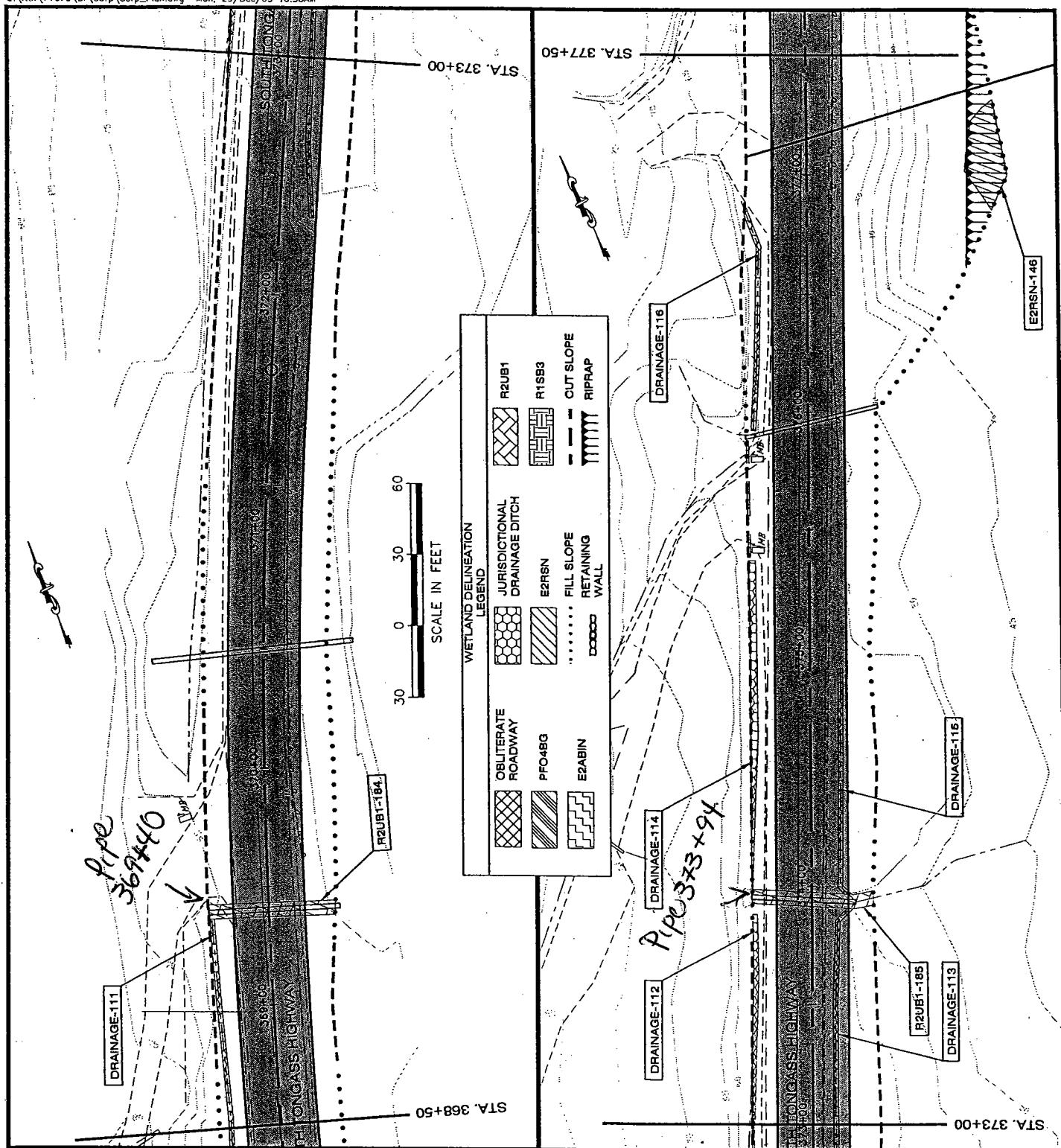
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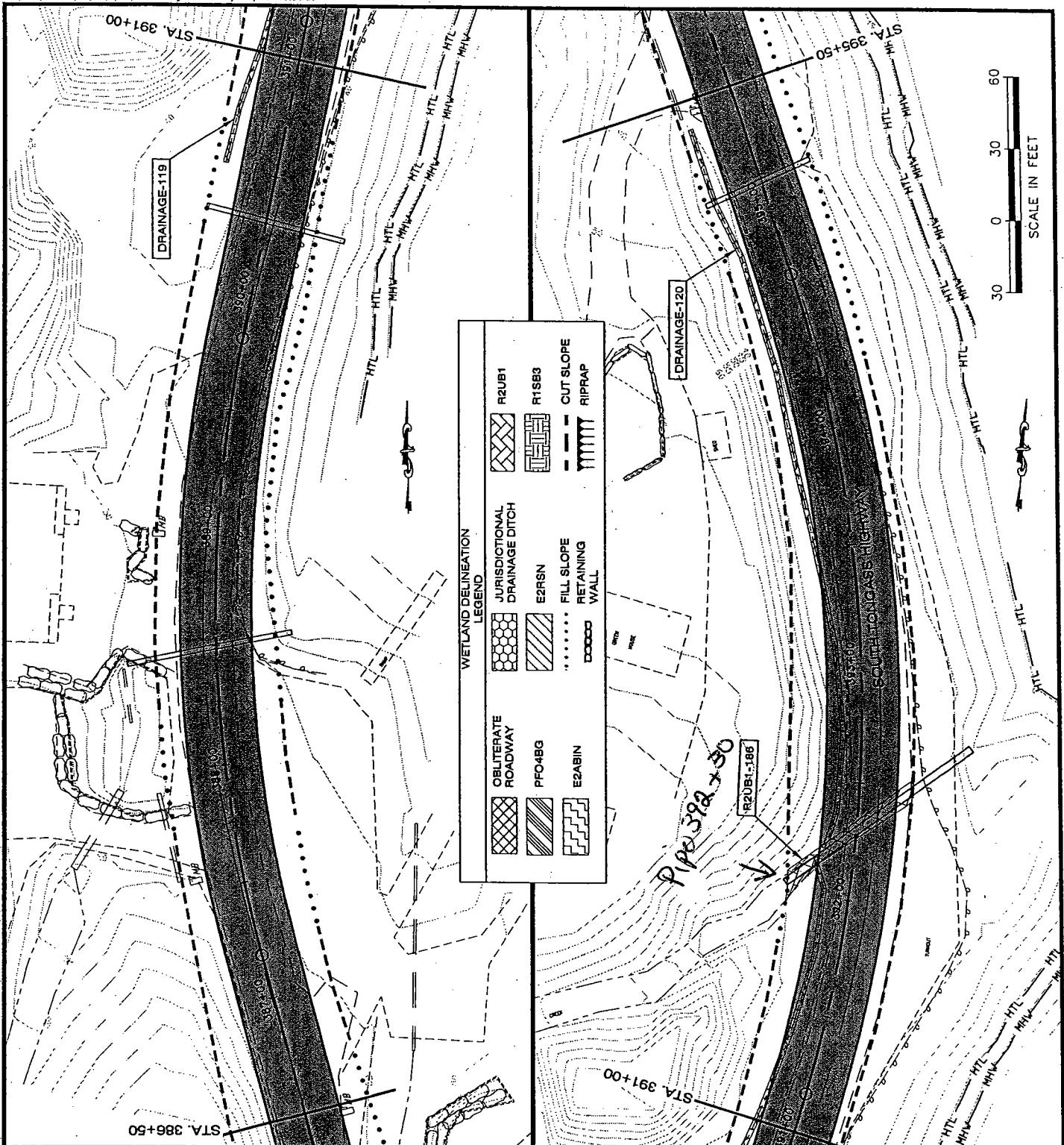
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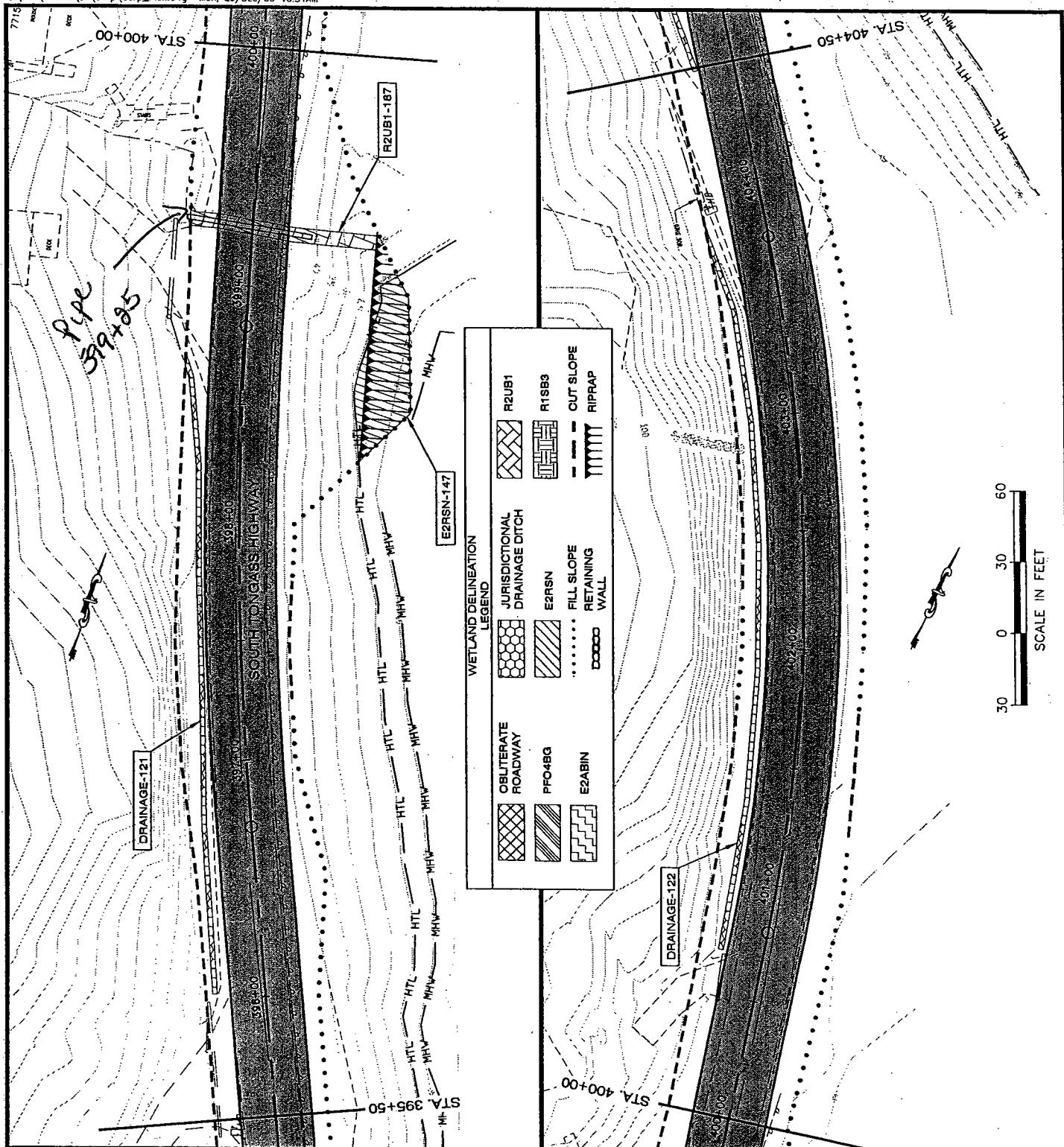
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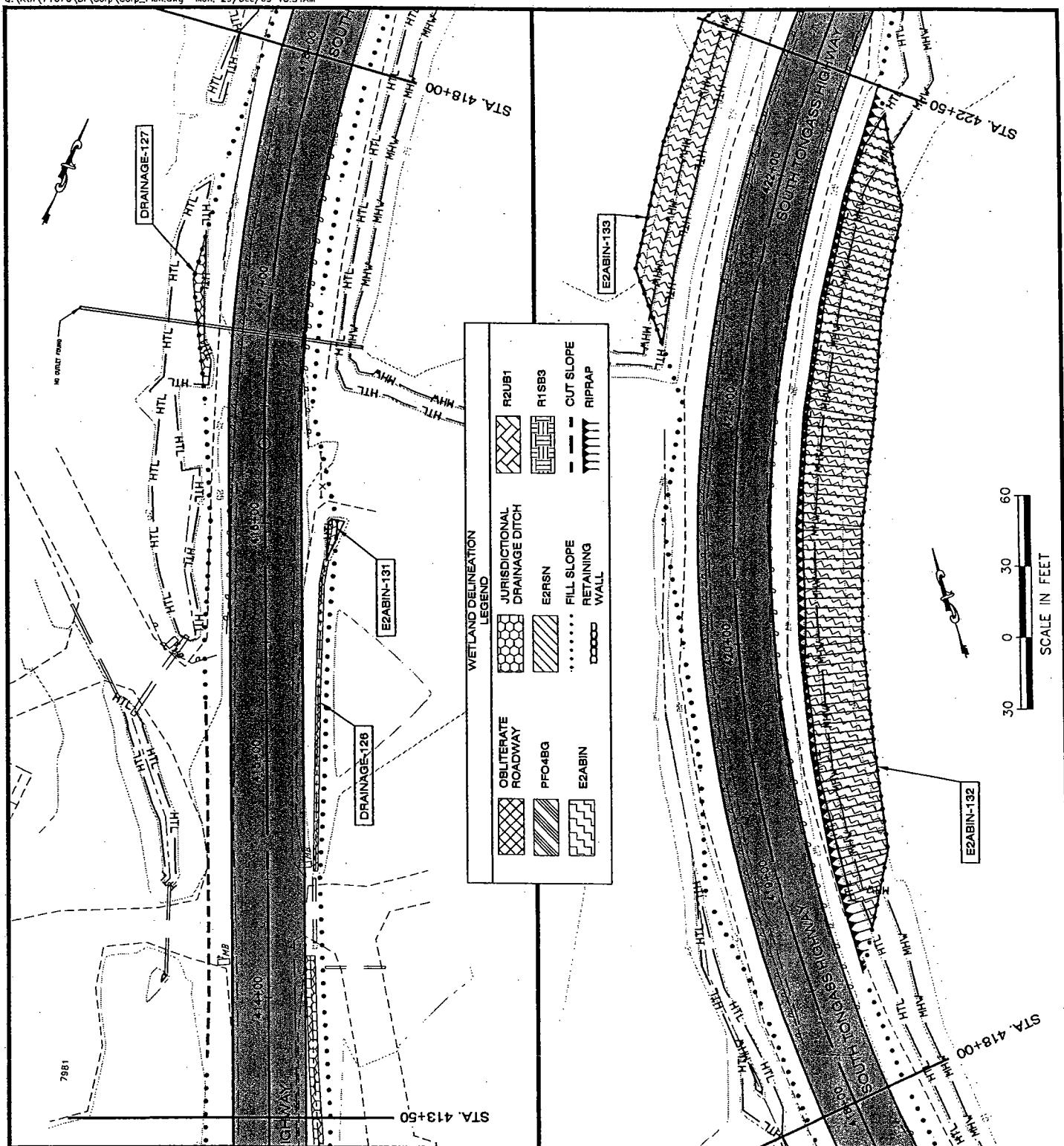
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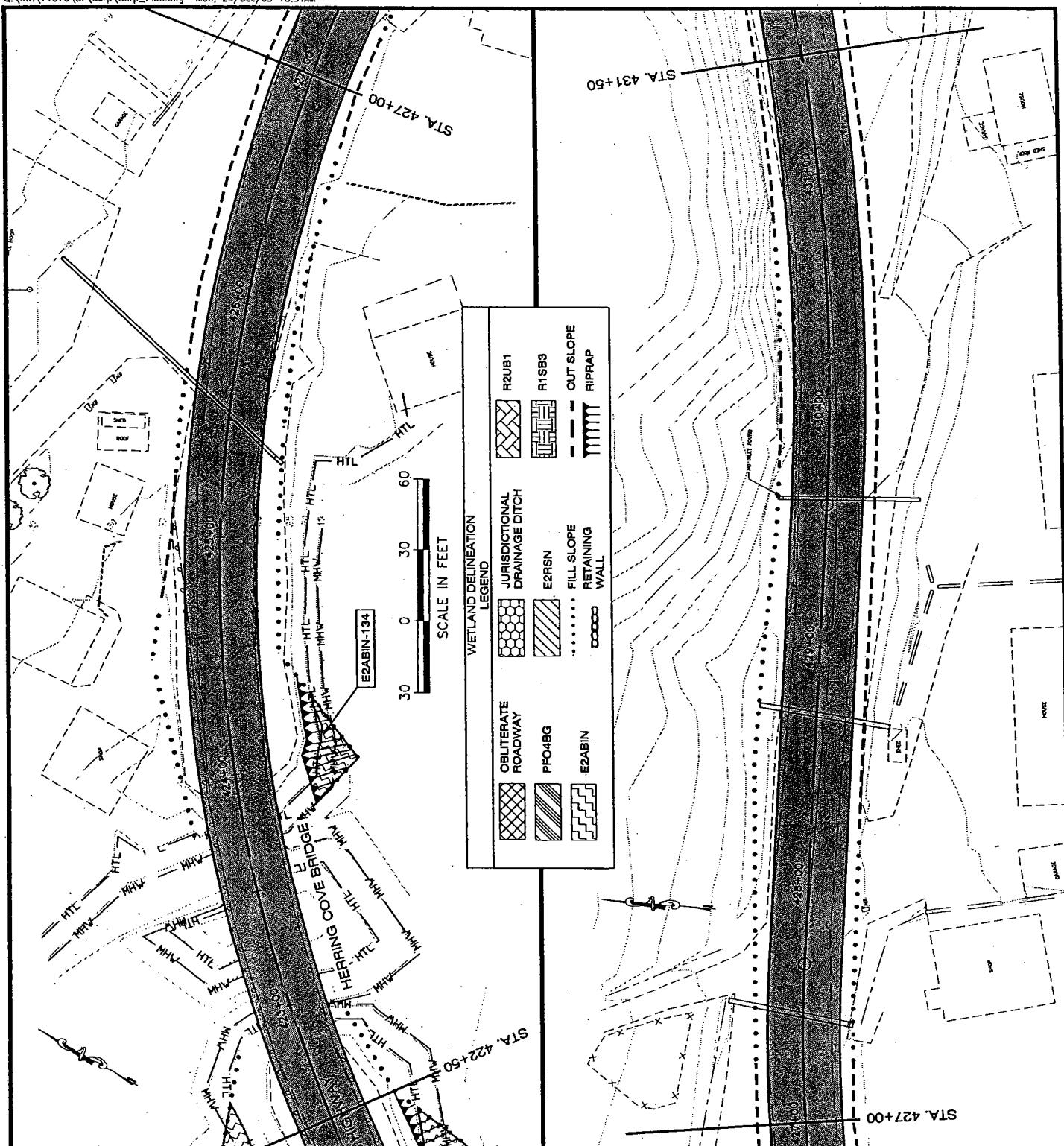
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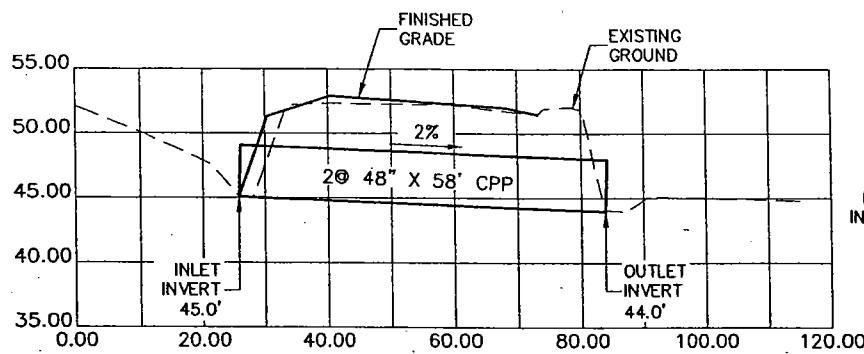
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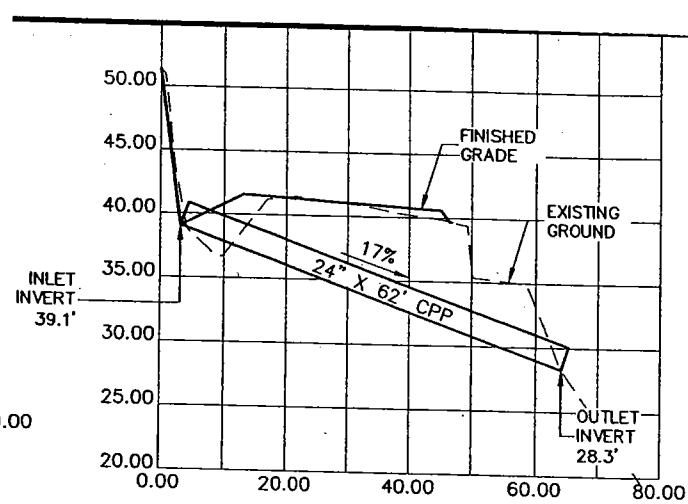
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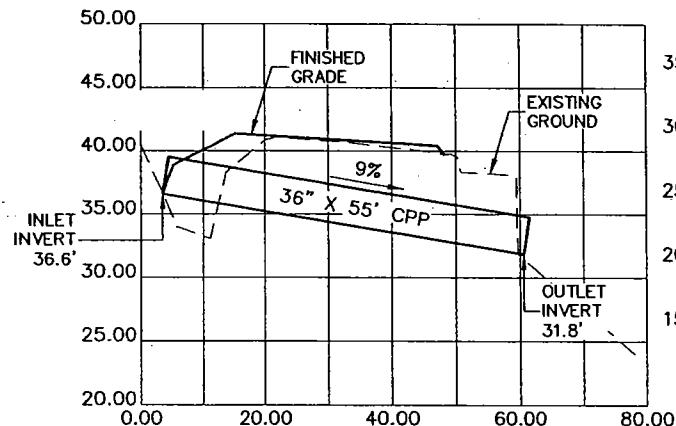
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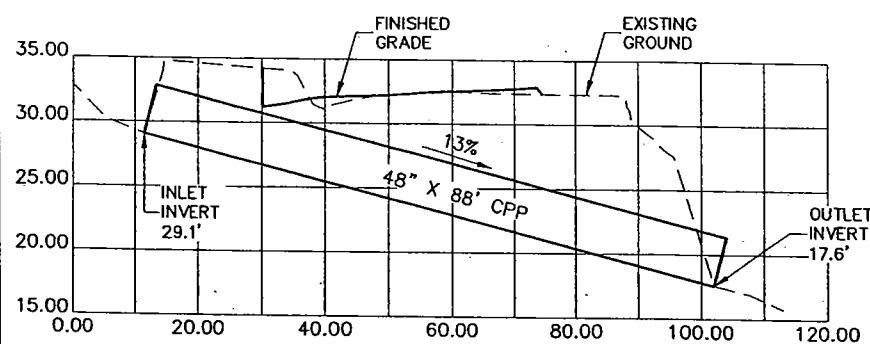
PIPE 39+38



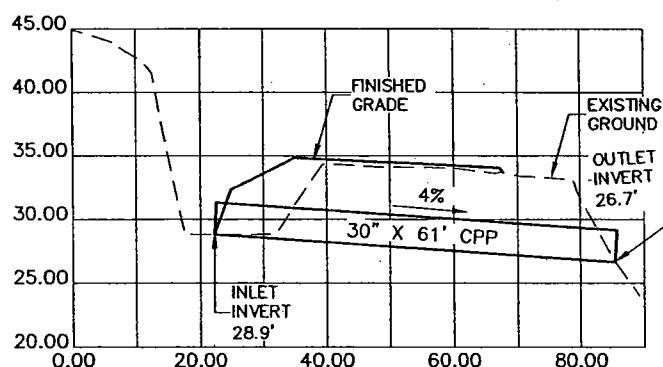
PIPE 53+12



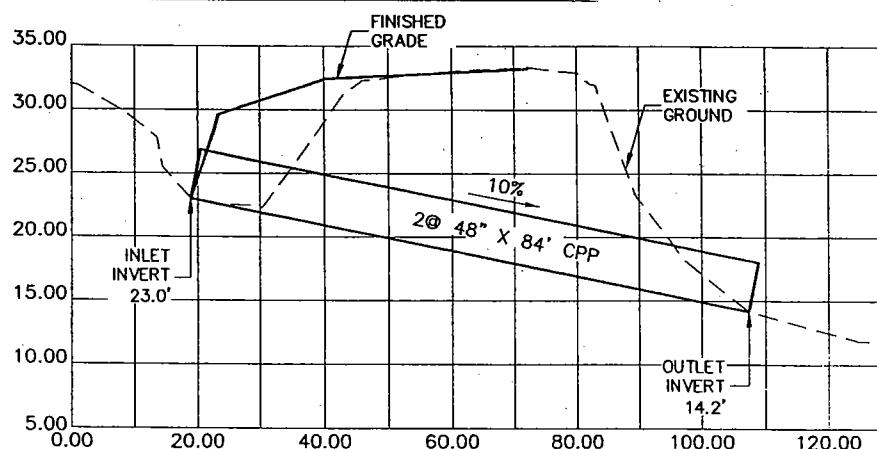
PIPE 54+84



PIPE 63+80



PIPE 67+06



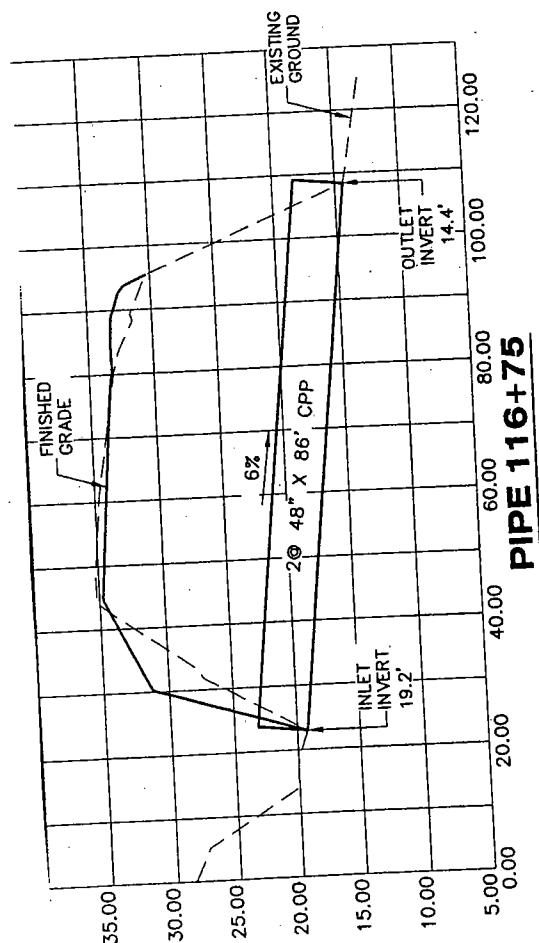
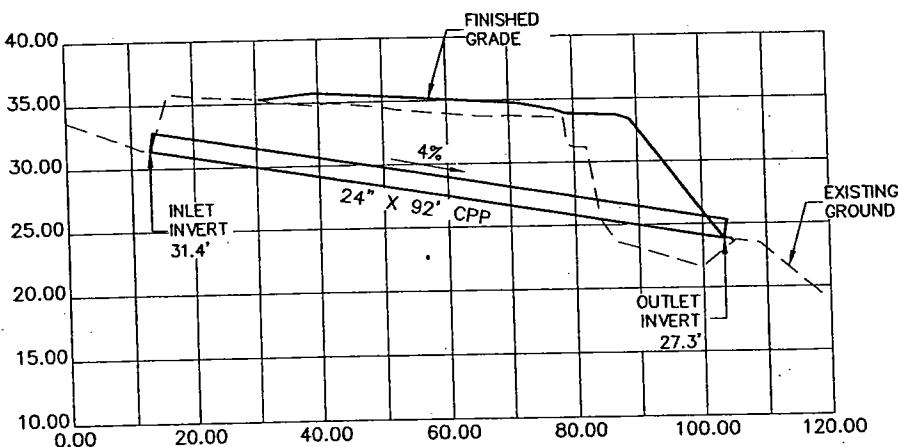
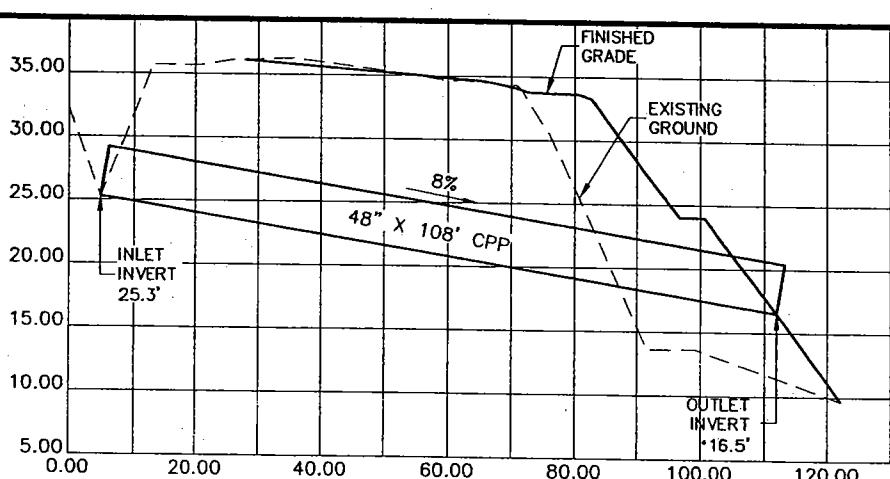
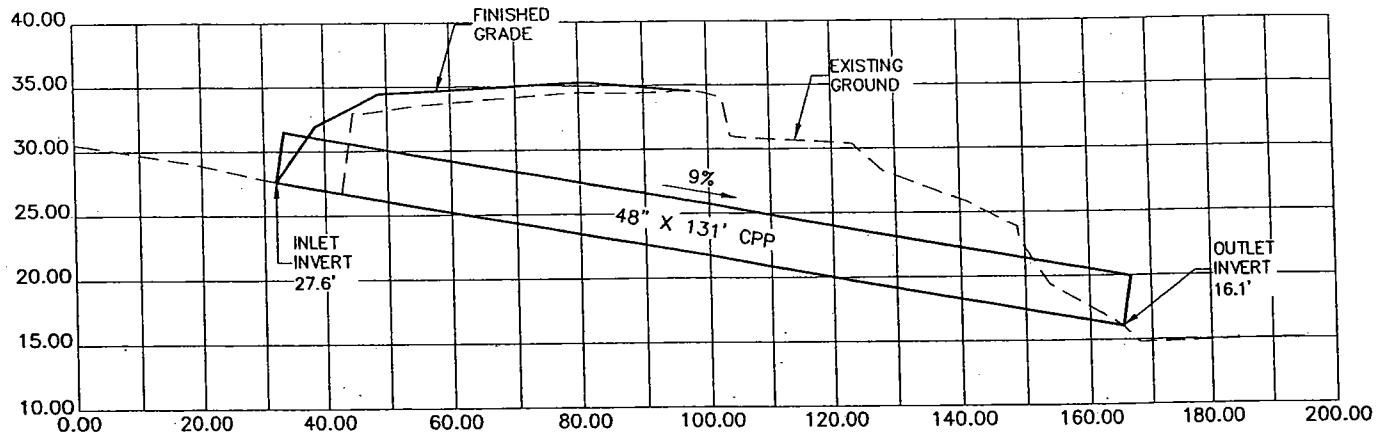
PIPE 85+47

CULVERT PIPE PROFILE NOTES:
(APPLY TO ALL PIPE PROFILES)

1. PROFILES ARE A PRESENTATION OF VERTICAL GRADES ONLY. SEE PLAN SHEETS FOR THE PLAN VIEW REPRESENTING THE HORIZONTAL LAYOUT OF THE STREAM.
2. CULVERT REPLACEMENT WILL REQUIRE DISTURBING EXISTING GROUND. AFTER INSTALLATION, EXISTING GROUND WILL BE RESTORED TO EXISTING CONDITIONS.

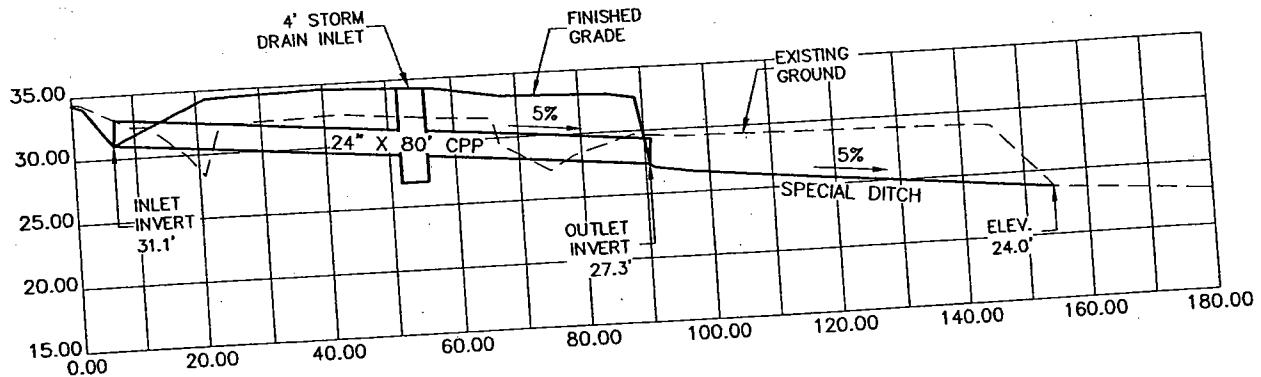
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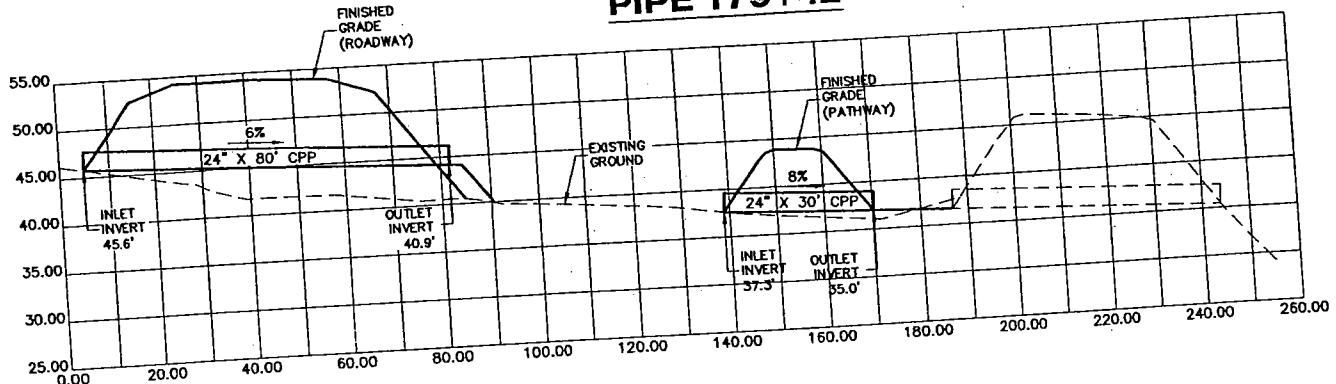


SOUTH TONGASS HIGHWAY
South Tongass Highway

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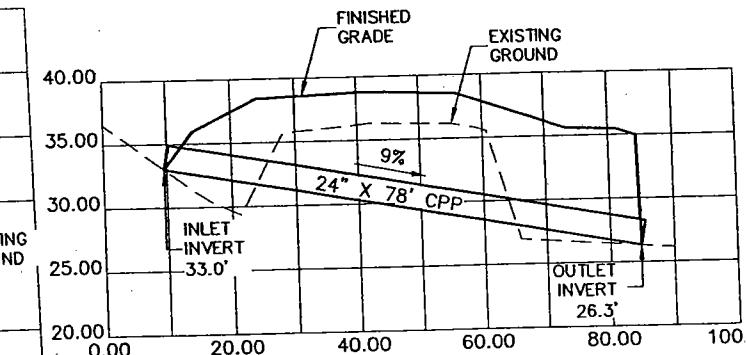
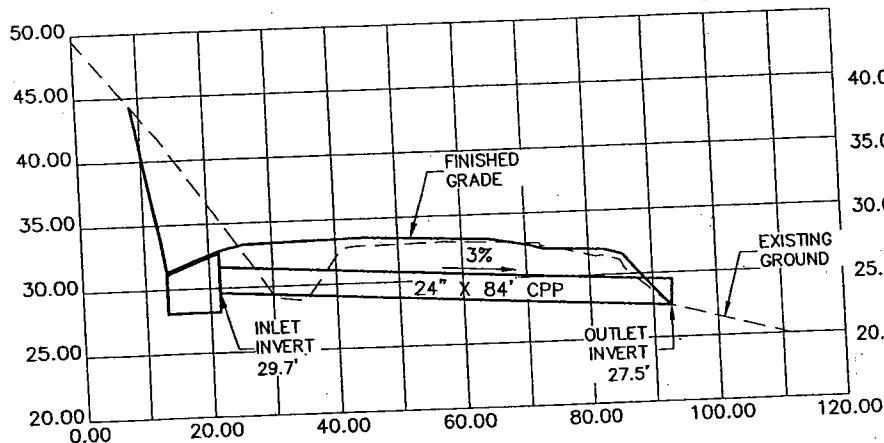


PIPE 179+42



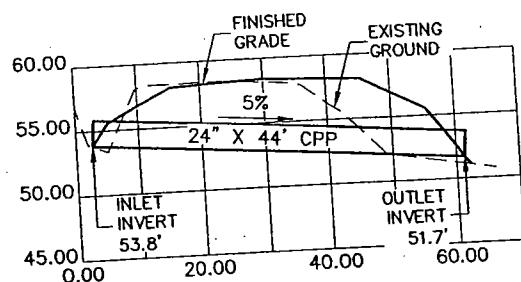
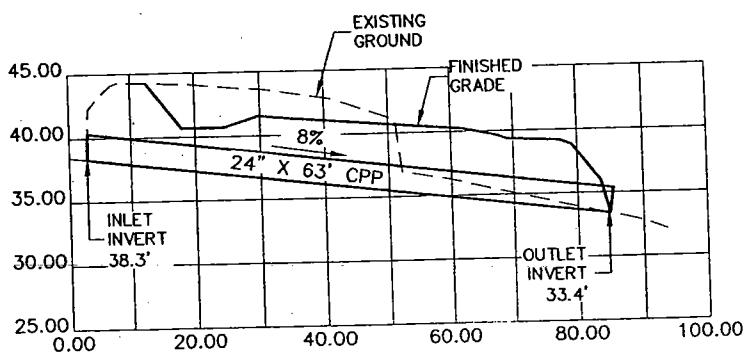
PIPE 215+92

PIPE 216+00



PIPE 241+17

PIPE 257+85

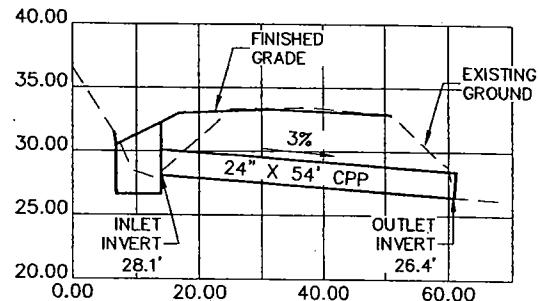
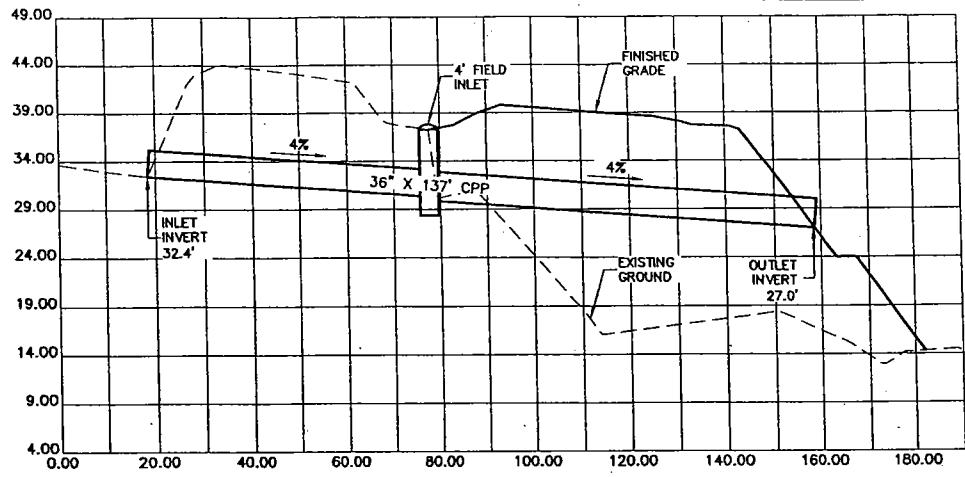


PIPE 373+94

SOUTH TONGASS HIGHWAY

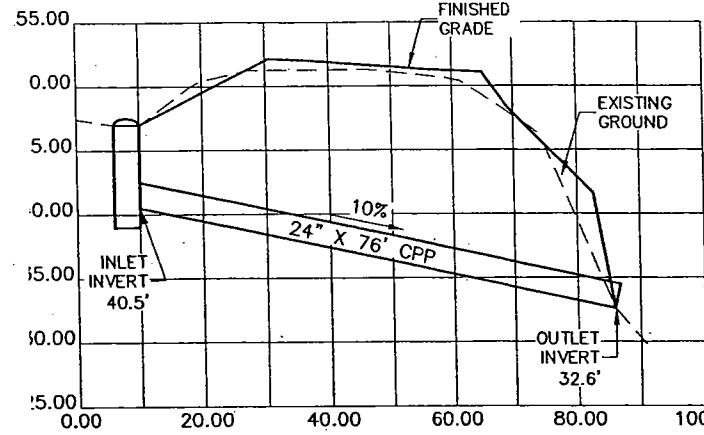
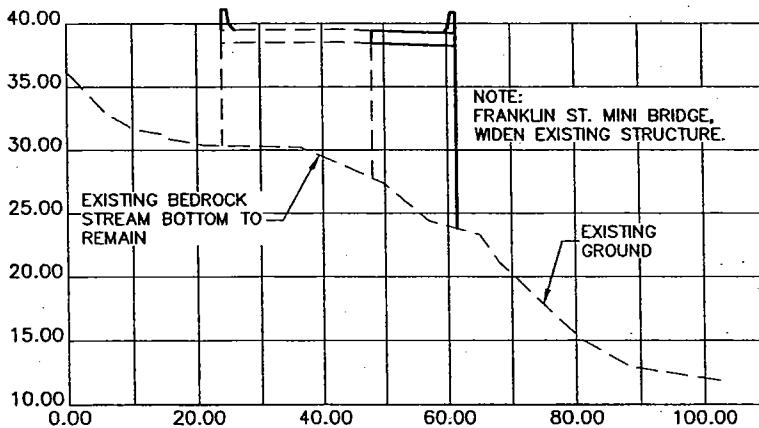
South Tongass Highway

PIPE 272+17



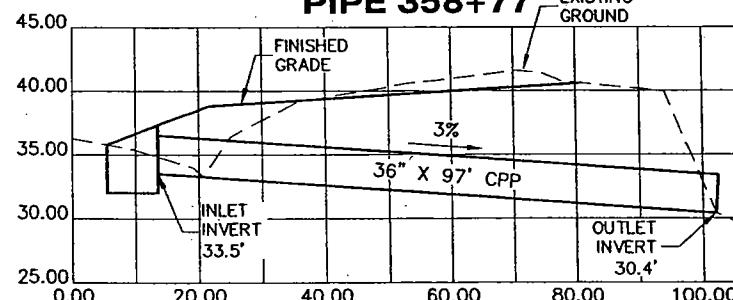
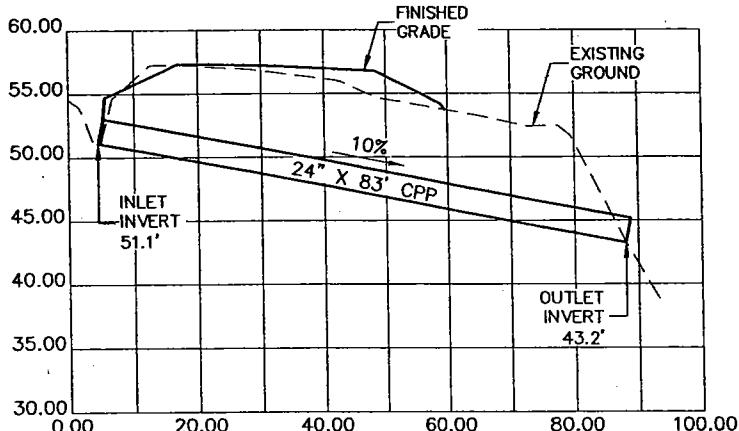
PIPE 351+44

PIPE 274+51



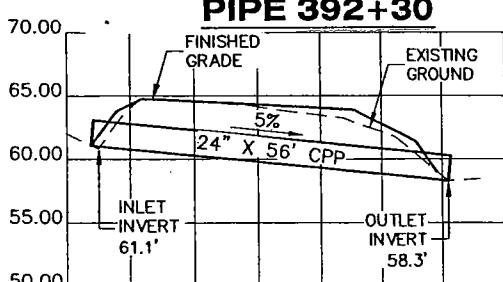
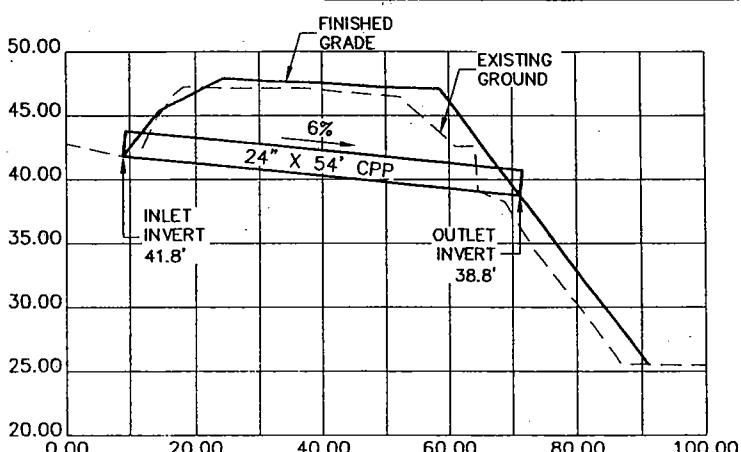
PIPE 358+77

PIPE 324+55



PIPE 392+30

PIPE 361+62



PIPE 369+40

SOUTH TONGASS HIGHWAY

South Tongass Highway

POA-2003-66-2

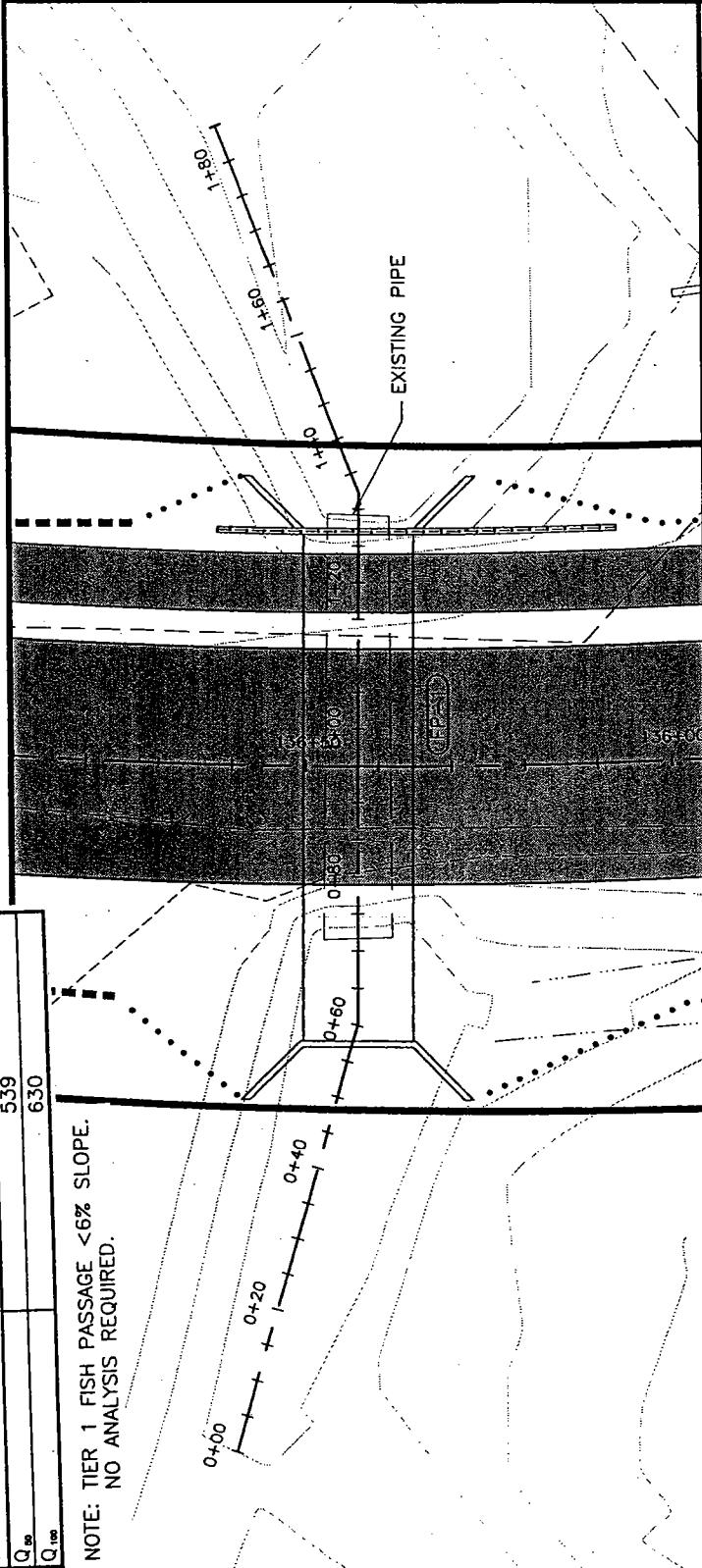
Tongass Narrows

2-17-04

PIPE 399+25

TABLE A WORK WINDOW AND DESIGN FLOWS	
DESIGN FLOWS	CUBIC FEET PER SECOND
Q ₅₀	539
Q ₁₀₀	630

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.



PLAN VIEW FISH PIPE 1

15'-0" SPAN 7'-9" RISE
CORRUGATED ALUMINUM ARCH

CONCRETE
HEADWALL

5' CHAIN
LINK FENCE

ROW

45 DEGREE CONCRETE HEADWALL
WINGWALL

45 DEGREE CONCRETE WINGWALL

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

PLAN VIEW FISH PIPE 1

15'-0" SPAN 7'-9" RISE
CORRUGATED ALUMINUM ARCH

CONCRETE
HEADWALL

5' CHAIN
LINK FENCE

ROW

45 DEGREE CONCRETE HEADWALL
WINGWALL

45 DEGREE CONCRETE WINGWALL

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

4.0' ROW

12" MIN. CONCRETE FOOTING
ON BEDROCK

7.2' ROW

7.8' ROW

70.2' ROW

QUANTITIES	
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM ARCH	CLASS 1
RIPRAP OUTLET APRON	15'-0" x 7'-9"
SPAN X RISE LENGTH	70.2'
SLOPE (%)	4%

PROFILE FISH PIPE

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

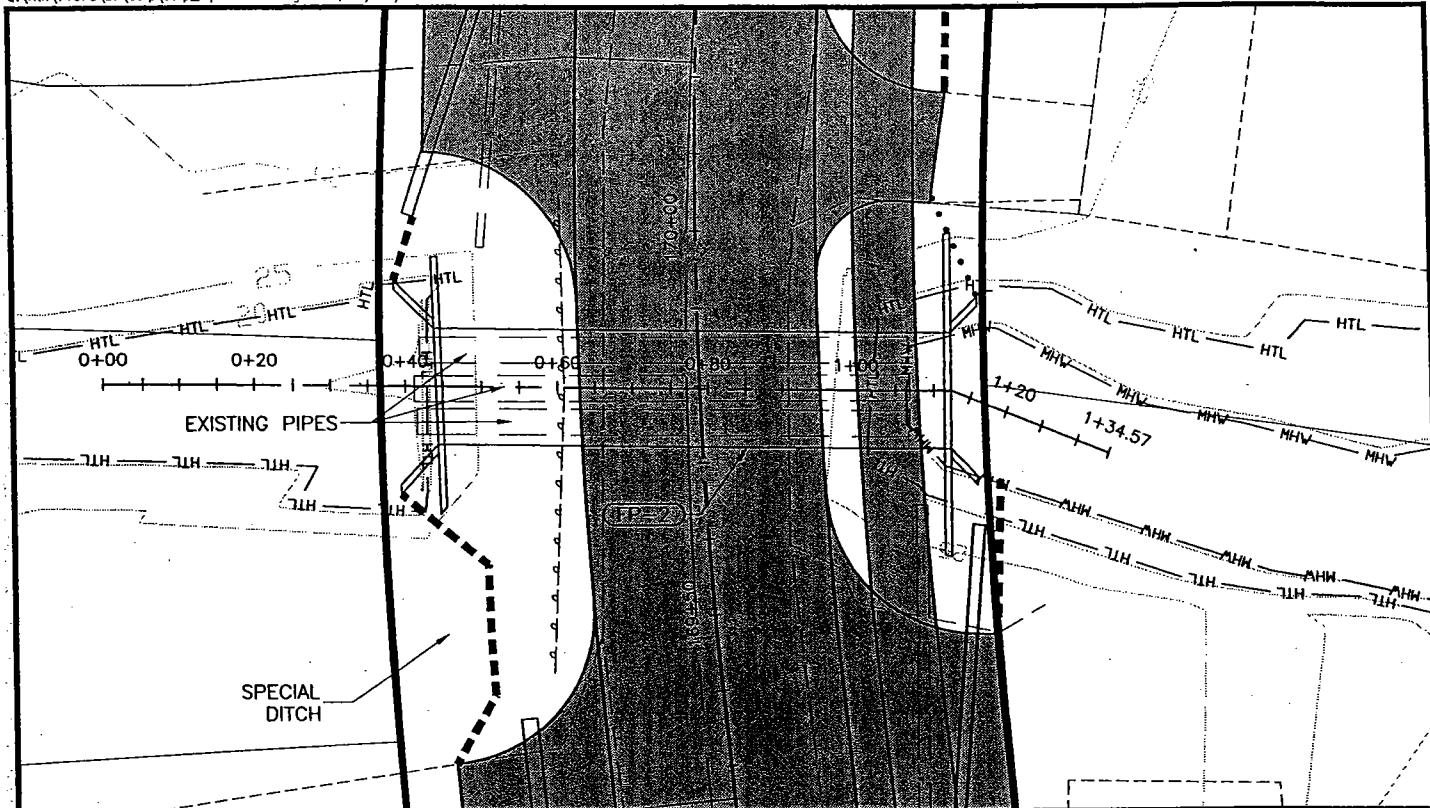
WATER BODY:
TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 1)

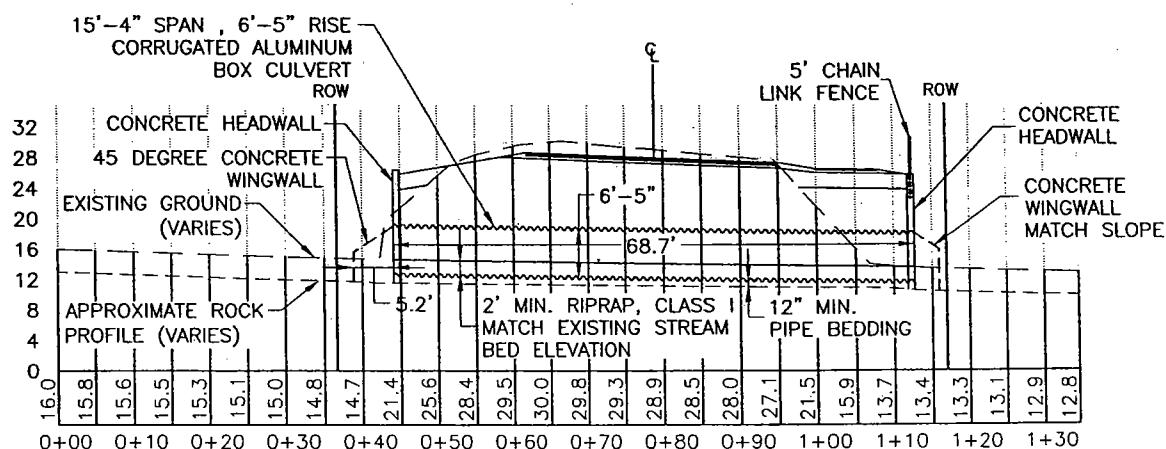
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

South Tongass Highway
POA-2003-66-2
Tongass Narrows
2-17-04



PLAN VIEW FISH PIPE 2



PROFILE FISH PIPE 2

WORK WINDOW AND DESIGN FLOWS	
DESIGN FLOWS	CUBIC FEET PER SECOND
Q ₅₀	370
Q ₁₀₀	410

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

PROPERTY OWNERS:
ENT

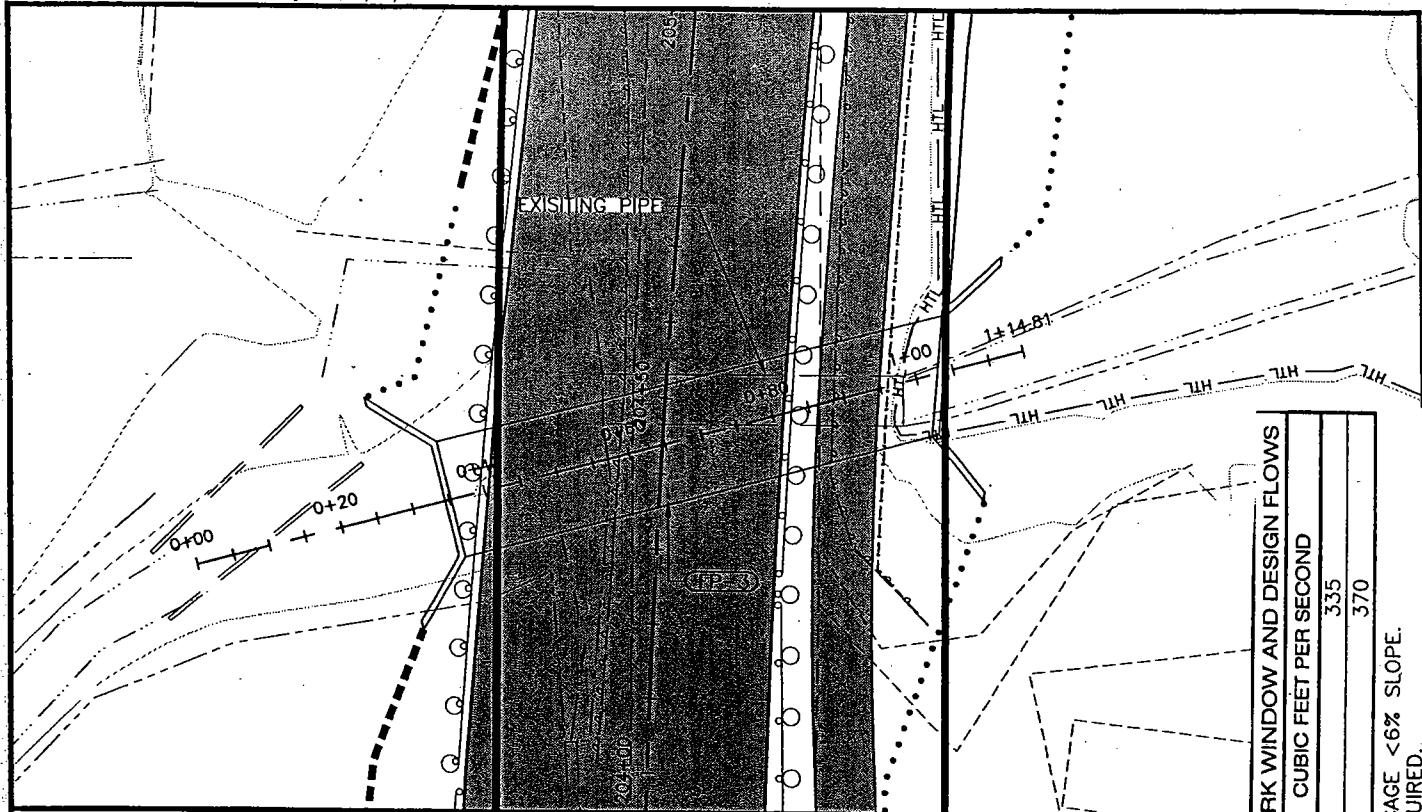
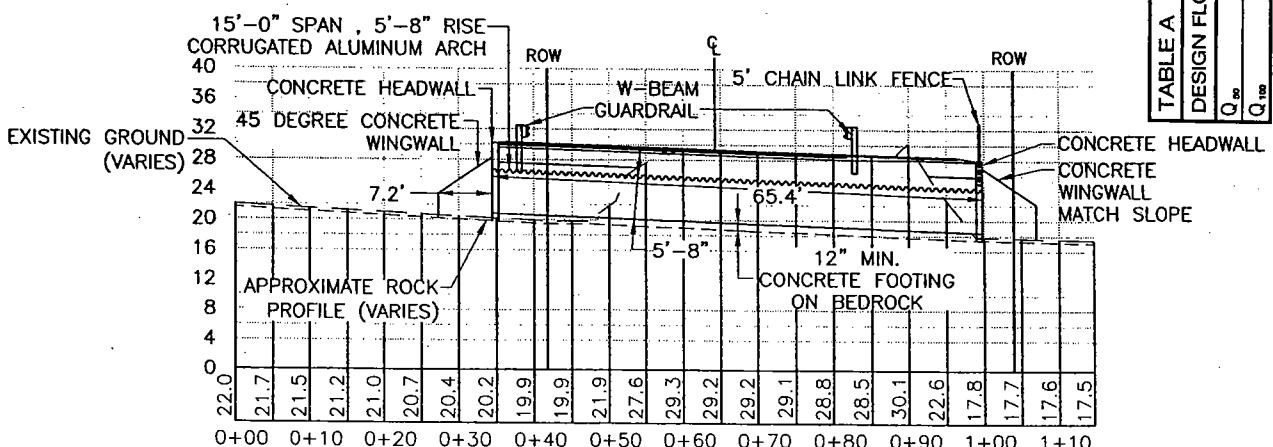
FISH CULVERT PLAN & PROFILE

DESCRIPTION	QUANTITIES
CORRUGATED ALUMINUM BOX CULVERT	SIZE OR CLASS
RIPRAP OUTLET APRON	CLASS I
RIPRAP PLACED INSIDE CULVERT	CLASS I, 2'
SPAN x RISE	15'-4" x 6'-5"
LENGTH	68.7'
SLOPE (%)	1.5

SOUTH TONGASS HIGHWAY

AT
South Tongass Highway

POA-2003-66-2
Tongass Narrows
2-17-04

**PLAN VIEW FISH PIPE 3**

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q ₈₅	335
Q ₁₀₀	370

PROFILE FISH PIPE 3

ADJACENT PROPERTY OWNERS: SEE ATTACHMENT 9-2003-0066 TONGASS NARROWS 552	FISH CULVERT PLAN & PROFILE (Fish Pipe 3) APPLICATION BY: ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES S.E. REGION DESIGN & ENGINEERING SERVICES	SOUTH TONGASS HIGHWAY South Tongass Highway POA-2003-66-2 Tongass Narrows 2-17-04
WATER BODY: TONGASS NARROWS GEORGE INLET		